



Northern Missing Link Pre-Feasibility Study Initial Advice Statement

Queensland Rail

May 2005

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Initial Advice Statement

Prepared for

Queensland Rail

Prepared by

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May 2005

10300805

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Quality Information

Document Initial Advice Statement

Ref 10300805

Date May 2005

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Reviewed by K. Bagget

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
A	11/03/2005	Draft Issue	K. Bagget Associate Director	Original Signed
B	18/04/2005	Draft Issue	K. Bagget Associate Director	Original Signed
C	10/05/2005	Issued to Client	K. Bagget Associate Director	Original Signed
D	24/06/2005	Issued to Client	K. Bagget Associate Director	Original Signed

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Terms and Abbreviations

The following terms and abbreviations have been used in this report:

Terms	Definition
Corridor	A strip of land approximately 2km wide.
Regional ecosystems	Vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil.
Remnant vegetation	Is defined as vegetation where the predominant stratum of the vegetation is still intact, i.e. has at least 50% of the cover and more than 70% of the height, and is composed of species characteristic of the vegetation's undisturbed predominant stratum.
Route	Alignment of the centreline of the railway within the corridor, with an accuracy of approximately ± 50 m. Generally the alignment would follow the corridor centreline. However, the ultimate route alignment would be determined after field survey and geotechnical investigation.

Abbreviations

ATP	Authority to Prospect Permit
CLR	Contaminated Land Register
CTC	Centralised Traffic Control
DoT	Department of Transport
EIS	Environmental Impact Statement
EMR	Environmental Management Register
EPA	Queensland's Environmental Protection Agency
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act (1999)</i>
EPC	Exploration Permit for Coal
GHFL	Grazing Homestead Freehold Lease
GHPL	Grazing Homestead Perpetual Lease
IAS	Initial Advice Statement
LRC	Eight-Wheeled Locomotive Remote Control Unit (wagon)
MGA	Migratory Gang Accommodation
MIM	Mount Isa Mines
NRM	Queensland Department of Natural Resources and Mines
NSD	Northern Statistical Division
OFC	Optic Fibre Cable
PDH	Pastoral Development Holding
QR	Queensland Rail
TAADT	Train Volume Per Week (T) x Annual Average Daily Traffic (ADDT)
ToR	Terms of Reference
TOW	Train Order Working
VSNB	Eight-Wheeled Steel Bottom Discharge Coal Hopper Wagon
WRC	Water Resources Commission

Executive Summary

The proposed North Goonyella to Newlands rail link, commonly referred to as the Missing Link, is situated in the Central Queensland Bowen Basin coalfields, directly west of the township of Glenden. The Proposal involves the construction of a 72km rail link between North Goonyella and Newlands. The line would be a single 60kg rail, 26TAL on concrete sleepers track with a desirable 80km/h train speed. Initially, the line will utilise diesel locomotives. However, future plans for electrification are being considered. The rail corridor would be approximately 40 m wide and include three passing loops. Works would include:

- Construction of additional works sites (temporary accommodation, storage, machinery yards, ballast and stockpile);
- Construction of access and maintenance tracks;
- Construction of culvert and drainage upgrades;
- Installation of a fibre optic link for communications and signalling; and
- Installation of remote control signalling.

There is additional infrastructure associated with the Missing Link that will be required for final train operations, however the scope and nature of this additional infrastructure is yet to be determined and as such is not specifically referenced in this document. This additional infrastructure will be subject to a separate environmental assessment and approval as required.

The full Northern Missing Link project will extend from the Goonyella system through to the Abbot Point Coal terminal and is shown on the enclosed drawing – SUR 1456 contained in this Executive Summary.

The nature of additional infrastructure works is expected to relate to the following:-

- (i) Isolated sections of new rail infrastructure to service Goonyella system mines that wish to export to Abbot Point (these mines have not been finally determined).
- (ii) On the Newlands system there is expected to be brownfield infrastructure within the existing corridor – the scope and location of which is the subject of on-going Feasibility studies.
- (iii) There is a possible Greenfield option for a deviation on the Newlands system. Current investigations are underway to assess the need or otherwise for this deviation
- (iv) There will be the requirement for a second loop at Abbot Point which is expected to be contained within the existing operational rail loop at the Port.

By reference to these elements this IAS recognises that there may be other project elements required beyond the specific greenfield railway connecting the two rail systems. However, these other items will be defined as design development and proceeds.

The remainder of this document refers to the greenfield portion of the railway connecting the Goonyella and Newlands systems.

The three new passing loops would be constructed at the following locations:

- North Goonyella – approximately 215.2km;
- Midway – approximately 241.9km; and
- Newlands – approximately 261.5km.

Provisions would be made for the following infrastructure in the new rail corridor between North Goonyella and Newlands. These are:

- Track maintenance depot;
- Machinery crossing;
- Maintenance access road;
- Sutter Development Road underbridge;
- Creek invert crossings; and
- Open level crossings.

The rail link would allow coal trains presently operating on the Goonyella system (from the Central Queensland coal fields) currently using the facilities at Dalrymple Bay, to unload at Abbot Point near Bowen. Likewise, coal trains loading at Newlands and presently using Abbot Point, would have the option of unloading at Dalrymple Bay. Coal can also be railed from Newlands to Hay Point.

This choice of port facilities is strategically important as the handling facilities at Hay Point are presently nearing maximum capacity. Choice of port facilities would further allow blending of coal as required to meet overseas customers' requirements.

The presence of a rail link is expected to foster new mines in the region as well as provide a strategic emergency link if the North Coast Line is closed.

The North Goonyella to Newlands Missing Link is expected to cost in the vicinity of \$200 million (QR, 2005).

The route of the proposed rail link commences on the relatively flat lowlands, at North Goonyella. The route generally heads north for approximately 40km through mainly brigalow country that has been extensively cleared for low intensity grazing pasture. Beyond this, the topography changes to the hilly rubble covered rises and low basalt ridges and basalt plugs of the Leichhardt Range. The selected route circuits several of the major ridges and gently ascends into the range before descending to the existing rail line at Newlands mine.

The proposed route traverses eight properties under grazing leases and three Shires, Belyando, Nebo and Bowen. The route would cross remnant native vegetation classified as "Endangered" (brigalow, poplar box and Dawson gum) and "Of Concern" (Queensland bluegrass) under the *Vegetation Management Act 1999*. The brigalow and Queensland bluegrass communities are listed as a threatened (endangered) community under the *Environment Protection and Biodiversity Conservation Act (EPBC) 1999*. Accordingly, referral to the Commonwealth Department of Environment and Heritage for determination whether a "Controlled Action" is required would need to be undertaken.

A search of the Queensland Environmental Protection Agency (EPA) WildNet database also identified three birds of conservation significance under the *Nature Conservation Act 1992*; one snake listed as "vulnerable" under the EPBC Act and one reptile listed as "rare" under the *Nature Conservation Act 1992* as being previously recorded in the vicinity of the proposed rail line.

Two homesteads, Wollombi and Talwood are located approximately 2km and 1km respectively from the proposed line and are the most likely to be impacted by noise related construction activities. Four native title claims are registered for properties crossed by the proposed line.

This Initial Advice Statement supports the proposal for a rail line between North Goonyella to Newlands. The Proposal would have a low to moderate impact on the environment and recommendations for additional studies to gather information for the preparation of an Environmental Impact Statement (EIS) are made in the relevant sections of this report

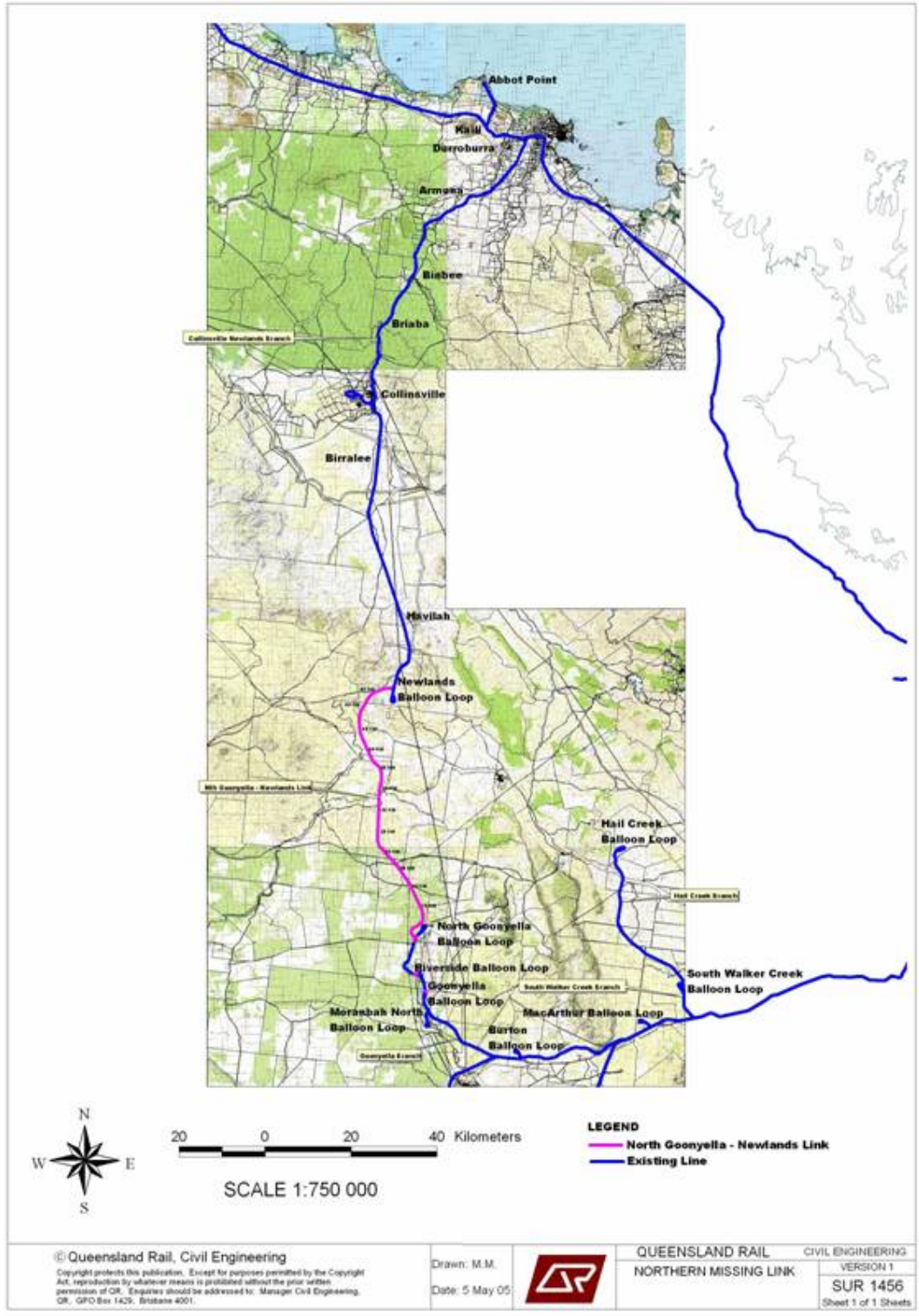


Figure 1: Location of Proposed Line

1.0 Introduction

1.1 Proposal Location

The proposed North Goonyella to Newlands rail link, commonly referred to as the Missing Link, is situated in the Central Queensland Bowen Basin coalfields, directly west of the township of Glenden approximately 180km inland of Mackay (Figure A1 at Appendix A). The exact alignment is yet to be confirmed (the route shown in all figures is indicative). No major changes to the current alignment are expected, however the final corridor would be determined based on the findings of further environmental investigations and consultation with land owners and government agencies.

1.2 Proposal Description

The Proposal involves the construction of a 72 km rail link between North Goonyella and Newlands. The line would be a single 60 kg rail, 26TAL on concrete sleepers track with a desirable 80km/h train speed. Initially, the line will utilise diesel locomotives. However, future plans for electrification are being considered. The rail corridor would be approximately 40m wide and include three passing loops. Works would include:

- Construction of additional works sites (temporary accommodation, storage, machinery yards, ballast and stockpile);
- Construction of access and maintenance tracks;
- Construction of culvert and drainage upgrades;
- Installation of a fibre optic link for communications and signalling; and
- Installation of remote control signalling.

Additional infrastructure upgrades are required in the Newlands and Goonyella rail systems for the whole system to be operational, however, the scope and nature of this additional infrastructure is yet to be determined and will be subject to a separate approvals process.

The full Northern Missing Link project will extend from the Goonyella system through to the Abbot Point Coal terminal and is shown on the enclosed drawing – SUR 1456 contained in this Executive Summary.

The nature of additional infrastructure works is expected to relate to the following:-

- (i) Isolated sections of new rail infrastructure to service Goonyella system mines that wish to export to Abbot Point (these mines have not been finally determined).
- (ii) On the Newlands system there is expected to be brownfield infrastructure within the existing corridor – the scope and location of which is the subject of on-going Feasibility studies.
- (iii) There is a possible Greenfield option for a deviation on the Newlands system. Current investigations are underway to assess the need or otherwise for this deviation
- (iv) There will be the requirement for a second loop at Abbot Point which is expected to be contained within the existing operational rail loop at the Port.

By reference to these elements this IAS recognises that there may be other project elements required beyond the specific greenfield railway connecting the two rail systems. However, these other items will be defined as design development and proceeds. This additional infrastructure will be subject to a separate environmental assessment and approval as required. The remainder of this document refers to the greenfield portion of the railway connecting the Goonyella and Newlands systems.

The three passing loops on the new line would be constructed at the following locations:

- North Goonyella – approximately 215.2 km;
- Midway – approximately 241.0 km; and
- Newlands – approximately 261.5 km.

Provisions would be made for the following infrastructure in the new rail corridor between North Goonyella and Newlands. These are:

- Track maintenance depot;
- Machinery crossing;
- Maintenance access road;
- Sutter Development Road underbridge;
- Creek invert crossings; and
- Open level crossings.

The rail link would allow coal trains presently operating on the Goonyella system (from the Central Queensland coal fields) currently using the facilities at Dalrymple Bay, to unload at Abbot Point near Bowen. Likewise, coal trains loading at Newlands and presently using Abbot Point, would have the option of unloading at Dalrymple Bay. Coal can also be railed from Newlands to Hay Point G wagons are used.

This choice of port facilities is strategically important as the handling facilities at Hay Point are presently nearing maximum capacity. Choice of port facilities would further allow blending of coal as required to meet overseas customers' requirements.

The presence of a rail link is expected to foster new mines in the region as well as provide a strategic emergency link if the North Coast Line is closed.

1.3 Capital Cost, Timing and Workforce

The North Goonyella to Newlands Missing Link is expected to cost in the vicinity of \$200 million QR, 2005). Additional electrification infrastructure may also be required costing, in the vicinity of \$170 million

Construction is expected to start late 2006, and take approximately 18 months. Construction would require a workforce of up to 200 people who would be accommodated at nearby towns.

1.4 Need and Justification

With the forecast large growth in the coal sector, there is the requirement for Queensland Rail (QR) to invest substantially in rail infrastructure over the next five years to meet this requirement. A corresponding increase in coal port export capacity is also required. The Missing Link solution between the Goonyella and Newlands systems has been identified as part of the potential method of enhancing the Goonyella system capacity expansion to meet mine requirements for export of thermal and coking coal.

There are many benefits that would emerge from the completion of the Missing Link.

These benefits would accrue to different sectors of the Queensland economy but include:

- Insurance – so long as there is sufficient capacity in the infrastructure, the completion of the Missing Link would provide an alternative avenue for mines to export coal;
- System-wide – the construction of the Missing Link would enable deferral of expensive infrastructure augmentations elsewhere (such as triplication of components of the Goonyella system);
- Marketing - the development of the Missing Link would provide additional blending options for producers;
- Optimising output – the construction of the Missing Link would potentially enable the most valuable coal to be shipped through Queensland coal export terminals in the event of an interruption to the coal chain elsewhere;
- Relieving capacity constraints – ensuring there is sufficient coal chain capacity would enable above rail efficiency to be optimised; and
- Strategic – mines (and the government) may perceive benefits in having a greater choice in export terminals.

1.5 Consideration of Alternatives

Prior to identifying the Missing Link as the preferred option, investigations were undertaken by QR to assess other alternatives. Two other alternatives were considered; Hail Creek to Newlands – Option A, and Hail Creek to Newlands – Option B.

Option A departs Hail Creek Branch (which lies approximately 50 km to the east of North Goonyella) at the 42.5 km mark and extends in a north-west direction following the creek valleys through the Denham Range in the south and runs parallel to the western side of the Redcliffe Tableland in the north before connecting to the Newlands Branch at the 13km mark. The total length of the route is 75 km.

Option B is the same as option A to the 2 km mark on the Denham Range. However from this point Option B heads west for approximately 3 km. The final 12 km is in a northerly direction, joining the Newlands Branch at the 14 km mark. The length of the route is approximately 75 km.

Both of the above options were not preferred by QR due to increased length, landholder issues and potentially higher environmental impact due to creek crossings and vegetation clearing.

Consideration of Realignment of the Preferred Option

Further to the identification of the preferred options, two potential realignments have been identified. These realignments are shown in Figure A1 (Appendix A) and consist of the southern realignment and central realignment. These realignments take into consideration landholder issues and potential changes to mining leases.

1.6 Proponent

The proponent for this Proposal is Queensland Rail (QR).

QR has a global reputation for providing innovative rail-based transport services and is a \$2 billion a year business. On any week day, the QR network operates 900 train services and moves more than 400 000 tonnes of freight. QR has considerable expertise and is a well respected industry leader in the design and construction of railways and the systems needed to operate them.

QR's structure is based on four distinct lines of business:

- Freight and logistics services;
- Commuter and long-distance passenger services;
- Track access for our narrow, standard and dual gauge networks; and
- Rail-specific expert services.

2.0 Existing Environment

2.1 Land Systems

2.1.1 Existing Environment

The route of the proposed rail link commences on the relatively flat lowlands, at North Goonyella. The route generally heads north for approximately 40 km through mainly brigalow country that has been extensively cleared for low intensity grazing pasture. Beyond this, the topography changes to the hilly rubble covered rises and low basalt ridges and basalt plugs of the Leichhardt Range. The selected route circuits several of the major ridges and gently ascends the range before descending to the existing rail line at Newlands mine. (Refer Figures A2-1 to A2-4).

The nearest towns are Moranbah and Glenden. Moranbah is situated approximately 40km south east of Goonyella and was established to service the Goonyella and Riverside mines. Glenden is situated approximately 40km south-east of Newlands and services the Newlands mine and North Goonyella mine.

2.1.2 Landowners

The land holdings through which the proposed rail corridor would pass are shown in Figure A12.

<i>Property:</i>	Lot 3 on CP852527
<i>Owners:</i>	D V Kemp & R A Kemp
<i>Area</i>	12,610ha
<i>Holding:</i>	Grazing Homestead Freehold Lease (GHFL)
<i>Address:</i>	Mabbin Road, Moranbah.
<i>Approximate area required for rail corridor:</i>	56ha

<i>Property:</i>	Lot 3388 on PH2112
<i>Owners:</i>	Bilyana Holding (E P Mason)
<i>Area</i>	36,434 ha
<i>Holding:</i>	Pastoral Development Holding (PDH)
<i>Address:</i>	Mt Coolon Road, Eaglefield. 4742
<i>Approximate area required for rail corridor:</i>	20ha

<i>Property:</i>	Lot 2 on DK176
<i>Owners:</i>	B & J Pini
<i>Area</i>	17,500 ha
<i>Holding:</i>	Grazing Homestead Perpetual Lease (GHPL)
<i>Address:</i>	Mt Coolon Road, Eaglefield 4742
<i>Approximate area required for rail corridor:</i>	60ha

<i>Property:</i>	Lot 1 on CP905226 Wollombi
<i>Owners:</i>	G & L Perry
<i>Area</i>	9,859 ha
<i>Holding:</i>	Grazing Homestead Perpetual Lease (GHPL)
<i>Address:</i>	Wollombi Road, Suttor 4943
<i>Approximate area required for rail corridor:</i>	40ha

Property: Lot 689 on PH2015
Owners: A & P Maddem
Area 6,734ha
Holding: Pastoral Holding
Address: Wollombi Road, Suttor 4943
Approximate area required for rail corridor: 40ha

Property: Lot 9 on GV807254
Owners: Boomerang Holdings Pty Ltd & Epsom Pastoral Holding Pty Ltd
Area 10,300ha
Holding: Pastoral Holding
Address: Mt Coolon Road, Burton 4742
Approximate area required for rail corridor: 12ha

Property: Lot 4 on DK 264
Owners: Colinta Holdings Pty Ltd
Area 17,100 ha
Holding: Pastoral Holding
Address: Collinsville Nebo Road, Western Grazing. 4804
Approximate area required for rail corridor: 12ha

Property: Lot 3 on DK 236 Byerwen Holdings
Owners: Colinta Holdings Pty Ltd (a subsidiary of Xstrata)
Area 50,480ha
Holding: Pastoral Holding
Address: Collinsville Nebo Road, Western Grazing. 4804
Approximate area required for rail corridor: 26ha

2.1.3 Mining Permits and Leases

A search of the Department of Natural Resources and Mines (NRM) Interactive Resource Tenure Maps (see Appendix A Figures A13 to A17) shows mining-related leases and permits. A number of current exploration permits for petroleum (ATP) exist including BHP Coal, BNG, and CH4. The link also passes over a number of current exploration permits for coal (EPC) with numerous principle holders including QCoal, Christopher Ian Wallin, and BHP MITSUI Coal and runs along the edge of current mining leases held by XSTRATA Coal Queensland, Peabody Energy Australia Coal and BHP MITSUI Coal. The North Queensland Gas Pipeline runs almost parallel and to the west of the Missing Link.

2.1.4 Planning Scheme Provisions

The rail link between North Goonyella and Newlands traverses through three local government areas, namely the shires of Belyando, Nebo and Bowen. Current land zonings were obtained from the Department of Local Government and Planning and advice was received from each of the Councils regarding future zoning, together with comments on the rail link.

The land is mostly zoned as Rural A, with land near Newlands zoned Rural, and land near North Goonyella unzoned (see Appendix A, Figure A10).

2.2 Physical Characteristics

Topography

The rail link topography surrounding North Goonyella is relatively flat lowland brigalow country with extensive clearing for low intensity grazing. The lowlands area is located on the drainage systems of the Isaac River, Suttor River and Bowen River. Approximately 20 km south of Newlands the topography changes to hilly rubble covered rises and low basalt ridges and plugs associated with the Leichhardt Range. The route skirts several major ridges ascending the range gradually, before descending to the existing rail line at Newlands (Figure A1).

Geology

The study area is located on the "Mount Coolon, Qld" 1:250,000 geological series map, compiled by E J Malone. Examination of this map shows that the majority of the route consists of alluvium and lateritic soils and gravels over either Permian lithic sandstones and siltstones of the Blackwater Group, or Carboniferous flow-banded, acid tuff and agglomerate. These substrates of the Blackwater Group are exposed in places. The Leichhardt Range consists of Tertiary basalt flows and plugs of the Suttor and Exevale Formations over Permian micaceous siltstone and quartz sandstones.

Soils

The route crosses a range of soil types (shown in Figures A11) including:

- Finely structured, self mulching clays;
- Yellow, brown and red duplex soils;
- Massive earths; and
- Deep sandy soils.

It is expected that the erosive potential of the soils would range from low to moderate. Duplex soils are highly susceptible to rill and sheet erosion following disturbance, as finer soils overlay denser cohesive subsoils. Sandy soils and self mulching clays are susceptible to wind erosion, due to their small particle size, but the self mulching clays are generally well structured at depth and have a low overall erosion potential.

Examination of the NRM Burdekin Catchment Salinity Hazard Map shows that the study area has a low to moderate salinity hazard potential.

2.3 Biological Characteristics

2.3.1 Conservation Reserves

There are no defined national parks or nature conservation areas within the study area.

2.3.2 Flora

Flora investigations to date have involved a search of EPA's HERBRECS Database, examination of remnant regional ecosystem mapping, biodiversity and connectivity mapping, and a preliminary field investigation. The initial broad-scale field inspection was undertaken by a qualified botanist and verified remnant regional ecosystems occurring along the route.

Regional Ecosystem Mapping

Remnant vegetation communities refers to all intact, and predominately intact, vegetation communities and has one of three classifications under the *Vegetation Management Act 1999*; *endangered*, *of concern*, or *not of concern*. Environmental Protection Agency Queensland Parks and Wildlife Service Regional Ecosystem Mapping is presented in Figures A3 to A4. The route crosses a number of areas of remnant *endangered*, *of concern*, and *not of concern* regional ecosystems.

The *endangered* remnant regional ecosystems are generally brigalow (*Acacia harpophylla*) open woodlands, with poplar box (*Eucalyptus populnea*) or Dawson gum (*Eucalyptus cambageana*), and vine forests. The “*of concern*” remnant regional ecosystems include *Dichanthium sericeum* (Queensland bluegrass) grasslands and poplar box open woodlands.

The brigalow, bluegrass and semi-evergreen vine thicket ecological communities are listed as a threatened (endangered) ecological community under the EPBC Act. The listing for brigalow does not discriminate between established and regrowth brigalow. A referral to the Minister is required if permits for clearing are required under the *Vegetation Management Act 1999*, or for the clearing of brigalow regrowth that is greater than 15 years that has a significant impact.

Listing advice from the Threatened Species Scientific Committee recommends that the nominations for the specific semi-evergreen vine thickets found in the area be rejected as individual nominations. It is also anticipated that semi-evergreen vine thickets found in the area are likely to be small and patchy and occur along stream lines. It is anticipated that these communities would be completely avoided by the development.

Figure A8 show ecosystem diversity, richness and abundance. These maps were prepared using EPA’s Biodiversity Assessment and Mapping Methodology. Examination of this mapping shows that there is a strong correlation between areas with high ecosystem diversity and areas identified as *endangered* remnant regional ecosystems. This correlation highlights the conservation value of these ecosystems.

Queensland Herbarium Database (HERBRECS) Search

The HERBRECS database is maintained by the Queensland Herbarium (EPA) and lists plant specimens collected and catalogued with the Herbarium. The Herbarium has records of 208 species in the vicinity of the site (Appendix B). No endangered or rare plant species are listed in the immediate vicinity of the site.

Weeds

The presence of weed species and other declared plants would require investigation as part of the EIS. A Weed Management Plan may need to be developed to prevent potential spread of weed species during construction, operation and maintenance activities.

2.3.3 Fauna

Fauna investigations to date have involved conducting searches of the EPA WildNet database, the Queensland Museum’s vertebrate zoology database and corridor mapping.

Corridor mapping shows which ecosystems are important for contiguity for the study area (Figure A). These maps identify that the mid-section of the line intersects communities that are important for maintenance of connectivity. These corridors are made up of remnant regional ecosystems and include:

- *Not of concern* poplar box woodlands;
- *Endangered* Dawson gum woodlands; and
- *Of concern* brigalow and poplar box open forest.

WildNet Database Search

The WildNet database is maintained by the Environmental Protection Agency (EPA) and lists wildlife found in the area. The database notes the conservation status of wildlife under the *Nature Conservation Act 1992* (NCA) and status under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC). The results of the database search, Latitude between: -21.708975 and -21.131532 and Longitude between: 147.781262 and 147.998663 are presented in Appendix C.

Table 2-1 highlights the species found from the database search that have conservation status.

Table 2-1 WildNet Database Search Results

Class	Family	Scientific Name	Common Name	NCA	EPBC	Sig
Birds	<i>Ardeidae</i>	<i>Ardea alba</i>	Great egret	C		Y
Birds	<i>Falconidae</i>	<i>Falco cenchroides</i>	Nankeen kestrel	C		Y
Birds	<i>Meropidae</i>	<i>Merops ornatus</i>	Rainbow bee-eater	C		Y
Reptiles	<i>Elapidae</i>	<i>Denisonia maculata</i>	Ornamental snake	V	V	Y
Reptiles	<i>Scincidae</i>	<i>Anomalopus brevicollis</i>		R		Y

NCA Status - Indicates the conservation status of each taxon under the Nature Conservation Act 1992.

C = Common

V = Vulnerable

R = Rare

EPBC status: Environment Protection and Biodiversity Conservation Act 1999.

V = Vulnerable

Sig - Conservation significant species include those that are listed as rare or threatened under the Nature Conservation Act 1992 or threatened under the Environment Protection and Biodiversity Conservation Act 1999, have a management status of rare or threatened, or are listed under an international agreement (such as JAMBA, CAMBA and Bonn Convention).

Queensland Museum Vertebrate Zoology Database

The Queensland Museum database was searched for the study area and no entries were found. The search area was expanded to one degree of latitude and longitude to show species that occur in the area. Table 2-2 details the species found between latitude 21 and 22 and longitude 147 and 148 and their conservation status.

Table 2-2 Queensland Museum Vertebrate Zoology Database Search Results

Class	Family	Genus	Species	Location	EPBC	NCA
Reptiles	Chelidae	<i>Emydura</i>	<i>macquarii</i>	Pasha Station, via Clermont	V	R
Reptiles	Elapidae	<i>Denisonia</i>	<i>maculata</i>	Newlands Mine, inland from Mackay	V	V

2.4 Hydrological Characteristics

2.4.1 Surface Water

The rail link crosses a number of small creeks and drainage lines. These include ephemeral Kennedy and Eaglefield Creeks, and the larger Sutton Creek. All surface water drains inland from east to west and flows into Sutton River, part of the Belyando/Suttor sub-catchment which is in turn part of the 136 000km² Burdekin Basin catchment.

It is not uncommon for more than 80% of the annual stream flow of rivers in the Belyando/Suttor sub-catchment to occur between December and April, with no flow between May and November.

The turbidity of waters from the Belyando/Suttor sub catchment is extremely high as a result of high rates of erosion (NRM, 2002). Levels of salinity in the Belyando/Suttor sub-catchment waters are generally well within guideline limits.

2.4.2 Groundwater

The study area lies on the easterly edge of the Great Artesian Basin and forms part of the intake area. Little local information exists with respect to groundwater in the study area, however, it is not expected that the proposal would have significant impacts on groundwater.

2.5 Air and Noise Environments

Climate

The area has a hot semi-arid climate (mean annual temperature 18°C) with a dry season in winter and a wet season in the summer half of the year. The median rainfall recorded for Wollombi station, which is located approximately midway along the route, is around 580 mm.

Air

Winds are generally of low velocity (less than 10km/hr) with the prevailing wind direction from the north and north-east in the spring and summer and mainly from the south-east in autumn and winter. Air quality in the area is generally described as good given the rural nature of the surrounding environment.

Noise

The nearest properties to the proposed line are the Wollombi and Talwood homesteads that are approximately 2km and 1km from the line respectively. Other homesteads are at least 7km away from the line. Background noise levels in the whole study are expected to be low (see Table 2-2) as typically identified with rural areas.

Table 2-2 Expected Ambient Noise Levels

Time Period	L _{A,90} dB(A)
Day (7:00am – 6:00pm)	30 - 40
Evening (6:00pm – 10:00pm)	25 - 35
Night (10:00pm – 7:00am)	20

2.6 Socio-Economic Conditions

The study area forms part of the Northern Statistical Division (NSD) of Queensland. The NSD contains a number of local government areas including Bowen, Burdekin, Townsville, and Dalrymple. The information from the NSD is useful to discuss on a broad scale socio-economic conditions. Population growth of the division averaged 1.6% for the year 2000, with Townsville accounting for the bulk of the population growth (NRM, 2002).

The population of Belyando Shire was 10 580 in 2001 and Bowen Shire 12 648. The population of both these shires is expected to fall by approximately 6% in the 10 years to 2011. Unemployment rates for Belyando and Bowen Shires was 5% and 9% respectively, with median weekly income \$1 200 and \$550 respectively in 2001 (NRM, 2002).

2.7 Cultural Heritage

A map of cultural heritage sites (Figure A) was prepared by QR based on the location of cultural heritage items provided by the Cultural Heritage Co-ordination Unit (NRM) and shows that the rail link traverses in close proximity to several cultural heritage sites. These sites are identified as sandstone grindstone sites and a grinding dish.

A search of the National Native Title Tribunal database identified that there are a total of four native title claims registered for properties intersected by the route. These claims are not overlapping and are shown in Figure A6. The native title groups are:

- Jangga QC98/10;
- Wirri 2 QC98/11;
- Wirri 3 QC99/34; and
- Birri QC98/12.

2.8 Contaminated Land

A search of the Environmental Management Register (EMR) and Contaminated Land Register (CLR) was undertaken for properties intersected by the proposed line. The results of the search are presented in Table 2-3. The search was undertaken based on Lot numbers, and an entry on the database means that contamination exists somewhere on the property. A field investigation will need to be undertaken to determine if the line intersects any of the sites referred to on the register.

Table 2-3 Potentially Contaminated Sites

Property	EMR Result (Y/N)	CLR Result (Y/N)	Further information
Lot 3 CP852527	N	N	
Lot 3388 PH2112	N	N	
Lot 9 GV807254	Y	N	Livestock dip or spray race – operating a livestock dip or spray race facility
Lot 2 DK176			
Lot 1 CP905226	N	N	
Lot 689 PH2015	N	N	
Lot 4 DK264	Y	N	Mineral processing – chemically or physically extracting metalliferous ores
Lot 3 DK236	N	N	

3.0 Potential Impacts and Management Requirements

3.1 Land Systems

A large portion of the proposed rail corridor is currently being used for low density grazing. Construction of the Missing Link would remove an area 72km by 40 m from this use and could restrict stock movements from one side of the corridor to the other depending of crossing points.

The Proposal would have land use capability impacts by reducing effective property sizes, although it is not expected that the lot sizes would be reduced to a size that makes pastoral uses unviable. The degree to which each property is impacted upon by the proposed line would be provided in Section 2.1 above.

As part of the EIS further consultation will be undertaken with landholders and the wider community.

3.2 Biological Impacts

Clearing of regrowth and woodland would be necessary for the construction of the proposed rail line. For areas currently cleared and grazed, the potential biological impacts of the proposal would be minimal. For areas where remnant regional ecosystems require clearing, there could be a range of biological impacts that would require more detailed consideration.

The proposed rail corridor would traverse a number of remnant regional ecosystems that are classified as *endangered*, *of concern*, and *not of concern*. Clearing of sections of these ecosystems for construction of the rail corridor would result in some areas of vegetation becoming fragmented and others would suffer increased edge effects. This limited fragmentation would have the potential to reduce habitat value and connectivity of some ecosystems and would require further detailed investigation to consider how these proposed effects are avoided or mitigated.

The Regional Vegetation Management Code Northern Highlands covers most of the study area and the Regional Vegetation Management Code Northern Brigalow Region also covers the remainder of the study area. These codes provide performance requirements and acceptable solutions to achieve the purpose of the VMA and would need to be considered in further investigations.

Selection of the route aimed to minimise impact to *endangered* and *of concern* remnant regional ecosystems. Due to topographical constraints for the proposed rail line, a number of these ecosystems would be intersected, including Commonwealth protected communities. Further field investigations will more accurately map these ecosystems and further refinements could be made to the alignment to minimise disturbance.

Disturbance created during construction may provide an environment suitable for the proliferation of weed species. Therefore weed management would be a significant component of the environmental management of the construction and operation of the rail link.

Avoidance, mitigative and compensatory options will be explored and considered during detailed route planning and design. This will be expressed in the EIS.

As a minimum, the following further field investigations would be undertaken for the EIS:

- Detailed surveys of remnant regional ecosystems intersected by the proposed route to ground truth mapping and assess integrity and structure;
- Conduct targeted surveys for legislatively or otherwise significant plant and animal species potentially occurring on the site;
- Conduct ecosystem habitat surveys; and
- Conduct aquatic assessment for Suttor Creek crossed by the proposed rail line (ideally conducted shortly after substantial rainfall if practical).

3.3 Water Quality and Drainage

Construction has the potential to impact on surface water quality, primarily through increased sediment loads in runoff. Clearing of land disturbs and exposes soil increasing the potential for erosion. Construction would need to take into account seasonal factors affecting erosion and rehabilitation of the site would need to be conducted in a timely manner. An Environmental Management Plan would need to contain measures to reduce the potential for erosion to occur, and mitigate the impacts of erosion and sedimentation through the implementation of standard control measures.

The design of bridges and bridging works would need to consider zero afflux during flood events.

Measures would need to be included in operational management plans for the rail line that deal with the management of spills.

3.4 Noise

Noise during construction and operation is likely to have limited impacts due to the rural nature of the area and distance to homesteads. The closest two homesteads, Wollombi and Talwood are located approximately 2km and 1km from the proposed route respectively. Noise during construction and from diesel hauled coal trains could have an impact on these homesteads.

An assessment could be undertaken to investigate the effect of train noise on these two homesteads.

3.5 Vibration

Due to the distance to sensitive receivers, and the nature of substrate materials, it is considered unlikely that vibration generated during construction or operation of the line would have any significant impact.

3.6 Dust

Dust is likely to be generated during construction of the line and coal dust is likely to be generated during haulage. It is expected, however that these effects would be localised, given that prevailing winds have generally low velocities. Taking into account the seasonal direction of winds, that are generally north/south, it is further unlikely that any sensitive receivers would be affected.

3.7 Visual Amenity

The proposed rail link is spatially removed from townships and major roads. It is unlikely that the development would have significant impact on the visual amenity of the area.

3.8 Infrastructure Impacts

3.8.1 Electricity

The existing power distribution system in Queensland is shown in Figure A5. The main distribution centre is Mackay and servicing Moranbah and Glenden and the major transmission lines are to the east of the proposed rail corridor.

The proposed alignment impacts an existing 66kV power line servicing the North Goonyella mine which would have to be relocated. A 132kV power line connected to the 132kV main transmission line also services the mine. This power line would not be affected by the rail connection. This 132kV connection is shown in Figure A5.

3.8.2 Water Supply

Existing water supply to Moranbah and Glenden and the mines is from Eungella Reservoir, located some 75km north east of North Goonyella.

This service would not be affected by the proposed rail link.

3.8.3 Road Network

Major road networks in the region are shown in Figure A1. There are no known **future** road networks which would be affected by the proposed rail corridor. However, it is considered that the presence of the rail corridor may influence the construction of a road link between North Goonyella and Newlands. This would need to be discussed further with the Shire Councils.

The only existing major road that has to be crossed is the Suttor Developmental Road. Suttor Developmental Road is presently an unsealed gravel road and the average daily traffic count in 1988 was 44 vehicles/day.

Anticipated train movements across the crossing are estimated to be a minimum of two trains per day each way after construction, increasing to a possible maximum of eleven trains per day each way within five years of construction. The train movements assume a seven-day operation and a 288-day year.

Based on the above, the 'TAADT' as defined in the 1989 Main Roads Department (now DMR) publication "A Guide to the Signing and Control of Railway and Tramway Crossings" warrants an at-grade crossing. However, the DoT, Roads Division have recommended a grade-separated crossing on the basis of greater traffic safety with only slightly more cost. Further data collection and discussions would be required with the DoT and the Nebo Shire Council to determine if an at-grade crossing is to be constructed.

The rail link crosses two 'stock routes' to the south of Suttor Developmental Road. These stock routes were in place before the Suttor Developmental Road was constructed. It is understood that cattle are now driven down the road reserve of Suttor Developmental Road. Further discussions would be required with Nebo Shire Council and the Department of Natural Resources and Mines (Lands) regarding the potential effect on these stock routes.

3.8.4 Rail Infrastructure

A number of crossings and three passing loops (North Goonyella, Central and Newlands) for the proposed rail line would be required. The proposed crossings would be negotiated with property owners when designs are more advanced.

3.9 Cultural Heritage

Under the Duty of Care Guidelines (*Aboriginal Cultural Heritage Act 2003*), the development areas are categorised as category 5 (undisturbed green areas). Activity proposed under Category 5 is generally high risk that could harm Aboriginal cultural heritage.

A cultural heritage survey in consultation with local aboriginal representatives will be conducted of the proposed route.

3.10 Waste

Waste generated from construction of the proposed line would need to be disposed of off-site at a Council landfill. Recycling of materials (such as paper, metal, glass, plastics, oils) would need to be implemented where practical. All hazardous wastes would need to be appropriately stored in bunded areas and away from any watercourses.

4.0 Conclusion

4.1 Land Systems

A large portion of the proposed rail corridor is currently being used for low density grazing. Construction of the Missing Link would remove an area 72km by 40 m from this use and could restrict stock movements from one side of the corridor to the other depending of crossing points.

The Proposal would have land use capability impacts by reducing effective property sizes, although it is not expected that the lot sizes would be reduced to a size that makes pastoral uses unviable. The degree to which each property is impacted upon by the proposed line would be provided in Section 2.1 above.

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5.0 References

Department of Natural Resources and Mines (2004) *Vegetation Management Code for Ongoing Clearing Purposes Northern Brigalow Region (Brigalow Belt Bioregion)*

Department of Natural Resources and Mines (2002) *Burdekin Basin Water Supply Planning Study Report.*

Queensland Rail (1993) *North Goonyella to Newlands Rail Corridor Study. Volume 1 – Final Report.*

Queensland Rail (2005) *Proposal Definition Document – North Goonyella to Abbot Point Missing Link and Upgrade*

Appendix A

Figures

Appendix B

Queensland Herbarium Records

Appendix B Queensland Herbarium Records

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Lecythidaceae</i>		<i>Planchonia careya (F.Muell.) R.Knuth</i>	South Kennedy	60km W of Collinsville Along the Bowen Development
Angiosperm	<i>Asteraceae</i>		<i>Epaltes australis Less.</i>	South Kennedy	60km W Collinsville Along Bowen Developmental Rd T
Angiosperm	<i>Asteraceae</i>	*	<i>Parthenium hysterophorus L.</i>	South Kennedy	Fig Tree Bowen Shire Beside Track to HS 40km S Collinsville
Angiosperm	<i>Mimosaceae</i>		<i>Acacia triptera Benth.</i>	South Kennedy	Collinsville - Mt Coolon Rd 2km N of Cerita T/O (R)
Angiosperm	<i>Convolvulaceae</i>		<i>Operculina aequisejala (Domin) R.W.Johnson</i>	South Kennedy	Byerwen 37m S of Collinsville (Refset)
Angiosperm	<i>Chenopodiaceae</i>		<i>Sclerolaena muricata (Moq.) Domin var. muricata</i>	South Kennedy	Weetalaba Stn via Collinsville
Angiosperm	<i>Malvaceae</i>		<i>Abutilon leucopetalum (F.Muell.) F.Muell. ex Benth.</i>	South Kennedy	11km S of Scartwater HS
Angiosperm	<i>Thymelaeaceae</i>		<i>Pimelea decora Domin</i>	South Kennedy	'Newlands'
Angiosperm	<i>Boraginaceae</i>		<i>Heliotropium cunninghamii Benth.</i>	South Kennedy	32.5km S Down Rd to Nebo from Mt Coolon/Collinsville Rd
Angiosperm	<i>Poaceae</i>	*	<i>Eriochloa meyeriana (Nees) Pilg.</i>	South Kennedy	Lisgar HS Wilson Ck

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Poaceae</i>	*	<i>Eriochloa meyeriana (Nees) Pilg.</i>	South Kennedy	Lisgar HS Wilson Ck
Angiosperm	<i>Myrtaceae</i>		<i>Eucalyptus drepanophylla F.Muell. ex Benth.</i>	South Kennedy	32.8km from Coolon to Collinsville Rd on Glendon Rd
Angiosperm	<i>Myrtaceae</i>		<i>Corymbia dallachiana (Benth.) K.D.Hill & L.A.S.Johnson</i>	South Kennedy	32.8km from Coolon to Coollinsville Rd on Glendon Rd
Angiosperm	<i>Myrtaceae</i>		<i>Corymbia erythrophloia (Blakely) K.D.Hill & L.A.S.Johnson</i>	South Kennedy	32.8km from Coolon to Collinsville Rd on Glendon Rd
Angiosperm	<i>Proteaceae</i>		<i>Grevillea helmsiae F.M.Bailey</i>	South Kennedy	Nr Nebo
Angiosperm	<i>Nyctaginaceae</i>		<i>Boerhavia dominii Meikle & Hewson</i>	South Kennedy	Nr Nebo
Angiosperm	<i>Euphorbiaceae</i>		<i>Phyllanthus gunnii Hook.f.</i>	South Kennedy	'Newlands' Grid Ref 8455-895558
Angiosperm	<i>Proteaceae</i>		<i>Grevillea helmsiae F.M.Bailey</i>	South Kennedy	'Newlands' Grid Ref 8455-895558
Angiosperm	<i>Convolvulaceae</i>		<i>Ipomoea calobra W.Hill & F.Muell.</i>	South Kennedy	Nr Newlands Mine Grid Ref 8455-895558
Angiosperm	<i>Rutaceae</i>		<i>Flindersia australis R.Br.</i>	South Kennedy	'Newlands' Grid Ref 8455-895558
Angiosperm	<i>Apocynaceae</i>		<i>Parsonsia lanceolata R.Br.</i>	South Kennedy	'Newlands' Grid Ref 8455-895558
Angiosperm	<i>Loranthaceae</i>		<i>Amyema congener (Sieber ex Schult. & Schult.f.) Tiegh.</i>	South Kennedy	'Newlands' Grid Ref 8455-895558

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Amaranthaceae</i>		<i>Amaranthus cochleitepalus</i> Domin	South Kennedy	57.7km Along Road from Conway to Cerita (GPS 21 12 29 147 47 30)
Angiosperm	<i>Myrtaceae</i>		<i>Eucalyptus persistens</i> L.A.S.Johnson & K.D.Hill	South Kennedy	Newlands Mine 100km NW of Nebo
Angiosperm	<i>Amaranthaceae</i>	*	<i>Aerva javanica</i> (Burm.f.) Schult.	South Kennedy	Newlands Mine 100km NW of Nebo
Angiosperm	<i>Apocynaceae</i>		<i>Parsonsia plaesiophylla</i> S.T.Blake	South Kennedy	'Newlands' Grid Ref 8455-918538
Angiosperm	<i>Euphorbiaceae</i>		<i>Acalypha eremorum</i> Muell.Arg.	South Kennedy	'Newlands' Grid Ref 8455-901536
Angiosperm	<i>Lamiaceae</i>		<i>Glossocarya hemiderma</i> (F.Muell. ex Benth.) Benth. & Hook.f. ex B.D.Jacks.	South Kennedy	'Newlands' Grid Ref 8455-901536
Angiosperm	<i>Rubiaceae</i>		<i>Psydrax johnsonii</i> S.T.Reynolds & R.J.F.Hend.	South Kennedy	'Newlands' Grid Ref 8455-851531
Angiosperm	<i>Rubiaceae</i>		<i>Tarenna</i> sp. (Ka Ka Mundi NP W.J.McDonald+ 4642)	South Kennedy	'Newland' Grid Ref 8455-851531
Angiosperm	<i>Proteaceae</i>		<i>Grevillea helmsiae</i> F.M.Bailey	South Kennedy	'Newlands' Grid Ref 8455-851531
Angiosperm	<i>Capparaceae</i>		<i>Capparis lasiantha</i> R.Br. ex DC.	South Kennedy	'Newlands' Grid Ref 8455-856529
Angiosperm	<i>Acanthaceae</i>		<i>Pseuderanthemum variabile</i> (R.Br.) Radlk.	South Kennedy	'Newlands' Grid Ref 8455-885526
Angiosperm	<i>Sapindaceae</i>		<i>Alectryon diversifolius</i> (F.Muell.) S.T.Reynolds	South Kennedy	'Newlands' Grid Ref 8455-885526

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Euphorbiaceae</i>		<i>Acalypha eremorum</i> Muell.Arg.	South Kennedy	'Newlands' Grid Ref 8455-885526
Angiosperm	<i>Tiliaceae</i>		<i>Grewia scabrella</i> Benth.	South Kennedy	Newlands Mine Area
Angiosperm	<i>Chenopodiaceae</i>		<i>Maireana microphylla</i> (Moq.) Paul G. Wilson	South Kennedy	Newlands Mine Area
Angiosperm	<i>Capparaceae</i>		<i>Capparis shanesiana</i> F.Muell.	South Kennedy	'Newlands' Grid Ref 8455-868518
Angiosperm	<i>Poaceae</i>		<i>Cymbopogon bombycinus</i> (R.Br.) Domin	South Kennedy	Cerito Stn 1 Mile N of
Angiosperm	<i>Proteaceae</i>		<i>Grevillea helmsiae</i> F.M.Bailey	South Kennedy	7m NE of Wollombi Stn
Angiosperm	<i>Poaceae</i>		<i>Aristida caput-medusae</i> Domin	South Kennedy	7m NE of Wollombi Stn
Angiosperm	<i>Poaceae</i>		<i>Thyridolepis xerophila</i> (Domin) S.T.Blake	South Kennedy	Cerito Stn 1 Mile NE of
Angiosperm	<i>Poaceae</i>		<i>Cymbopogon refractus</i> (R.Br.) A.Camus	South Kennedy	3m NE of Cerito Stn
Angiosperm	<i>Caryophyllaceae</i>		<i>Polycarpaea spirostylis</i> subsp. <i>compacta</i> Pedley	South Kennedy	Cerito Stn 1 Mile N of
Angiosperm	<i>Poaceae</i>		<i>Dichanthium fecundum</i> S.T.Blake	South Kennedy	8m NNW of Dabin Stn
Angiosperm	<i>Mimosaceae</i>		<i>Acacia catenulata</i> C.T.White	South Kennedy	Cerito Stn 1 Mile E of

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Cyperaceae</i>		<i>Cyperus fulvus R.Br.</i>	South Kennedy	3m NE of Cerito Stn
Angiosperm	<i>Cyperaceae</i>		<i>Cyperus gracilis R.Br.</i>	South Kennedy	Cerito Stn 1 Mile N
Angiosperm	<i>Pittosporaceae</i>		<i>Pittosporum spinescens (F.Muell.) L.W.Cayzer, Crisp & I.Telford</i>	South Kennedy	7m NW of Dabin Stn
Angiosperm	<i>Ulmaceae</i>		<i>Trema tomentosa var. viridis (Planch.) Hewson</i>	Leichhardt	Lancewood 60m WNW of Nebo
Angiosperm	<i>Mimosaceae</i>		<i>Acacia bancroftiorum Maiden</i>	South Kennedy	Newlands Mine Nebo Shire
Angiosperm	<i>Proteaceae</i>		<i>Grevillea helmsiae F.M.Bailey</i>	South Kennedy	Newlands Mine Nebo Shire
Angiosperm	<i>Poaceae</i>	*	<i>Bothriochloa pertusa (L.) A.Camus</i>	North Kennedy	Midway Along Bowen-Collinsville Rd
Angiosperm	<i>Rutaceae</i>		<i>Geijera salicifolia Schott</i>	South Kennedy	5m NW of 'Suttor Ck' Stn
Angiosperm	<i>Apocynaceae</i>		<i>Alstonia constricta F.Muell.</i>	South Kennedy	7m NE of Wollombi Stn
Angiosperm	<i>Poaceae</i>	*	<i>Eragrostis cilianensis (All.) Vignolo ex Janch.</i>	South Kennedy	13.3km E of Wollombi going to Suttor Ck HS (GPS 21 16 28 147 50 05)
Angiosperm	<i>Poaceae</i>		<i>Enneapogon gracilis (R.Br.) P.Beauv.</i>	South Kennedy	13.3km E of Wollombi going to Suttor Ck HS (GPS 21 16 28 147 50 05)
Angiosperm	<i>Poaceae</i>	*	<i>Sporobolus coromandelianus (Retz.) Kunth</i>	South Kennedy	13.3km E of Wollombi going to Suttor Ck (GPS 21 16 28 147 50 05)

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Capparaceae</i>		<i>Capparis canescens</i> Banks ex DC.	South Kennedy	13.3km SE of Cerito HS on Rd to Wollombi (GPS 21 16 28 147 50 05)
Angiosperm	<i>Convolvulaceae</i>		<i>Operculina aequisepala</i> (Domin) <i>R.W.Johnson</i>	South Kennedy	12.7km S of Suttor Ck HS
Angiosperm	<i>Cyperaceae</i>		<i>Cyperus gilesii</i> Benth.	South Kennedy	Suttor Ck Cattle Stn Suttor Ck Glenden & Nebo
Angiosperm	<i>Fabaceae</i>		<i>Tephrosia juncea</i> Benth.	South Kennedy	Wollombi
Angiosperm	<i>Convolvulaceae</i>		<i>Evolvulus alsinoides</i> (L.) L.	South Kennedy	Wollombi
Angiosperm	<i>Convolvulaceae</i>		<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i> <i>Ooststr.</i>	South Kennedy	Wollombi
Angiosperm	<i>Rhamnaceae</i>		<i>Alphitonia excelsa</i> (A.Cunn. ex Fenzl) <i>Reissek ex Benth.</i>	South Kennedy	Mt Lookout
Angiosperm	<i>Rhamnaceae</i>		<i>Ventilago viminalis</i> Hook.	South Kennedy	Mt Lookout Stn Near Clermont
Angiosperm	<i>Casuarinaceae</i>		<i>Allocasuarina luehmannii</i> (R.T.Baker) <i>L.A.S.Johnson</i>	Leichhardt	Mt Lookout Stn via Clermont
Angiosperm	<i>Combretaceae</i>		<i>Terminalia oblongata</i> F.Muell. subsp. <i>oblongata</i>	South Kennedy	Mt Lookout Sutton River
Angiosperm	<i>Bignoniaceae</i>		<i>Pandorea pandorana</i> (Andrews) <i>Steenis</i>	South Kennedy	Mt Lookout Sulton River
Angiosperm	<i>Erythroxylaceae</i>		<i>Erythroxylum australe</i> F.Muell.	South Kennedy	Mt Lookout via Clearmont

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Apocynaceae</i>		<i>Alstonia constricta F.Muell.</i>	South Kennedy	Mt Lookout Suttor River
Angiosperm	<i>Sterculiaceae</i>		<i>Melhania oblongifolia F.Muell.</i>	South Kennedy	Lancewood 60m WNW of Nebo
Angiosperm	<i>Boraginaceae</i>		<i>Ehretia membranifolia R.Br.</i>	South Kennedy	Nebo Sutton Ck
Angiosperm	<i>Tiliaceae</i>		<i>Grewia latifolia F.Muell. ex Benth.</i>	South Kennedy	Lancewood
Angiosperm	<i>Poaceae</i>		<i>Brachyachne convergens (F.Muell.) Stapf</i>	Leichhardt	Lenton Downs C 50m WNW of Nebo
Angiosperm	<i>Asteraceae</i>		<i>Sigesbeckia orientalis L.</i>	Leichhardt	Lancewood CA 60m WNW of Nebo
Angiosperm	<i>Asteraceae</i>	*	<i>Zinnia peruviana (L.) L.</i>	North Kennedy	Lancewood CA 60m WNW of Nebo
Angiosperm	<i>Poaceae</i>		<i>Eragrostis megalosperma F.Muell. ex Benth.</i>	South Kennedy	Nebo Shire just after Suttor Ck Crossing between Talwood & Wollonibi
Angiosperm	<i>Poaceae</i>		<i>Aristida lignosa B.K.Simon</i>	Leichhardt	Between Lancewood and Talwood
Angiosperm	<i>Fabaceae</i>	*	<i>Stylosanthes guianensis (Aubl.) Sw. var. guianensis</i>	South Kennedy	Mackay Wollombi
Angiosperm	<i>Euphorbiaceae</i>		<i>Ricinocarpos ledifolius F.Muell.</i>	South Kennedy	6m W of Dabin Strn
Angiosperm	<i>Mimosaceae</i>		<i>Acacia bancroftiorum Maiden</i>	South Kennedy	Wollombi 55m S of Collinsville

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	Malvaceae		<i>Abelmoschus ficulneus</i> (L.) Wight & Arn. ex Wight	South Kennedy	'Dabin' Nebo
Angiosperm	Poaceae		<i>Chionachne hubbardiana</i> Henrard	South Kennedy	'Dabin' Nebo Shire
Angiosperm	Poaceae		<i>Ophiuros exaltatus</i> (L.) Kuntze	South Kennedy	6m SSW Suttor Ck Stn
Angiosperm	Sapindaceae		<i>Alectryon oleifolius</i> subsp. <i>elongatus</i> S.T.Reynolds	South Kennedy	Wollombi Stn 2m N
Angiosperm	Euphorbiaceae		<i>Ricinoscarpos ledifolius</i> F.Muell.	South Kennedy	6m W of Dabin Stn
Angiosperm	Acanthaceae		<i>Pseuderanthemum variabile</i> (R.Br.) Radlk.	South Kennedy	8.8km from Lancewood Yards on Road to Taliwood (GPS 21 25 39 147 52 12)
Angiosperm	Boraginaceae		<i>Ehretia membranifolia</i> R.Br.	Leichhardt	8.8km from Lancewood Yards to Talwood (GPS 21 25 39 147 52 12)
Angiosperm	Asteraceae	*	<i>Acanthospermum hispidum</i> DC.	South Kennedy	8.8km from Lancewood Yards to Talwood (GPS 21 25 39 147 52 12)
Angiosperm	Chenopodiaceae		<i>Chenopodium carinatum</i> R.Br.	South Kennedy	8.8km from Lancewood Yards to Talwood (GPS 21 25 39 147 52 12)
Angiosperm	Convolvulaceae		<i>Xenostegia tridentata</i> (L.) D.F.Austin & Staples	South Kennedy	8.8km from Lancewood Yards on Rd to Talwood (GPS 21 25 39 147 52 12)
Angiosperm	Poaceae	*	<i>Bothriochloa pertusa</i> (L.) A.Camus	South Kennedy	18km SW of Sleuden
Angiosperm	Ulmaceae		<i>Trema tomentosa</i> var. <i>viridis</i> (Planch.) Hewson	South Kennedy	Lancewood C 60m WNW of Nebo

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Solanaceae</i>		<i>Physalis</i>	South Kennedy	Lancewood
Angiosperm	<i>Myrtaceae</i>		<i>Corymbia clarksoniana</i> (D.J.Carr & S.G.M.Carr) K.D.Hill & L.A.S.Johnson	South Kennedy	56.8km from Coolon to Collinsville Rd on Glendon Rd
Angiosperm	<i>Amaranthaceae</i>		<i>Ptilotus polystachyus</i> (Gaudich.) F.Muell. forma <i>polystachyus</i>	South Kennedy	59km from Mt Coolon on Nebo Road
Angiosperm	<i>Euphorbiaceae</i>		<i>Euphorbia tannensis</i> subsp. <i>eremophila</i> (A.Cunn.) D.C.Hassall	South Kennedy	59km from Mt Coolon on Nebo Road.
Angiosperm	<i>Acanthaceae</i>		<i>Rostellularia adscendens</i> (R.Br.) R.M.Barker	South Kennedy	59km from Mt Coolon on Nebo Road.
Angiosperm	<i>Hemerocallidaceae</i>		<i>Tricoryne elatior</i> R.Br.	South Kennedy	T Coolon Rd S Side 8.1km W Of Lancewood Stn Turnoff 34.1km W Of North Goonyella Turnoff 8454-844204
Angiosperm	<i>Thymelaeaceae</i>		<i>Pimelea haematostachya</i> F.Muell.	South Kennedy	78km from Mt Coolon on Nebo Road
Angiosperm	<i>Rubiaceae</i>		<i>Spermacoce</i>	South Kennedy	78k from Mt Collon on Nebo Road
Angiosperm	<i>Polygalaceae</i>		<i>Polygala rhinanthoides</i> Sol. ex Benth.	Port Curtis	78km from Mt Coolon on Nebo Road.
Angiosperm	<i>Polygalaceae</i>		<i>Polygala rhinanthoides</i> Sol. ex Benth.	Moreton	78km from Mt Coolon on Nebo Road.
Angiosperm	<i>Fabaceae</i>		<i>Desmodium campylocaulon</i> F.Muell. ex Benth.	South Kennedy	Mt Coolon Rd N Side 2.5km E of Lancewood Stn Turnoff (GPS 21 31 28 147 54 51)
Angiosperm	<i>Boraginaceae</i>		<i>Trichodesma zeylanicum</i> (Burm.f.) R.Br.	South Kennedy	Mt Coolon Rd N Side 2.5km E of Lancewood Stn Turnoff (GPS 21 31 28 147 54 51)

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Fabaceae</i>		<i>Alysicarpus muelleri</i> Schindl.	South Kennedy	Mt Coolon Rd N Side 2.5km E of Lancewood Stn Turnoff (GPS 21 31 28 147 54 51)
Angiosperm	<i>Malvaceae</i>		<i>Sida trichopoda</i> F.Muell.	South Kennedy	Mt Coolon Rd N Side 2.5km E of Lancewood Stn Turnoff (GPS 21 31 28 147 54 51)
Angiosperm	<i>Thymelaeaceae</i>		<i>Pimelea haematostachya</i> F.Muell.	South Kennedy	Mt Coolon Rd N Side 2.5km E of Lancewood Stn Turnoff (GPS 21 31 28 147 54 51)
Angiosperm	<i>Poaceae</i>		<i>Aristida leptopoda</i> Benth.	South Kennedy	Mt Coolon Rd N Side 2.5km E of Lancewood Stn Turnoff (GPS 21 31 28 147 54 51)
Angiosperm	<i>Convolvulaceae</i>		<i>Ipomoea lonchophylla</i> J.M.Black	South Kennedy	Mt Coolon Rd N Side 2.5km E of Lancewood Stn Turnoff (GPS 21 31 28 147 54 51)
Angiosperm	<i>Poaceae</i>		<i>Astrebla lappacea</i> (Lindl.) Domin	South Kennedy	Mt Coolon Rd 400metres E of Junction of Rd & Eaglefield Ck 8454-953195 (GPS 21 31 28 147 55 12)
Angiosperm	<i>Amaranthaceae</i>		<i>Ptilotus fusiformis</i> (R.Br.) Poir. ex F.Muell. var. <i>fusiformis</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff
Angiosperm	<i>Malvaceae</i>		<i>Sida brachypoda</i> F.Muell. ex A.E.Holland & S.T.Reynolds	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff
Angiosperm	<i>Boraginaceae</i>		<i>Heliotropium pauciflorum</i> R.Br.	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff 34.1km W of North Goonyella Turnoff Site 1
Angiosperm	<i>Poaceae</i>		<i>Aristida calycina</i> R.Br. var. <i>calycina</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	<i>Poaceae</i>		<i>Paspalidium rarum</i> (R.Br.) Hughes	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	<i>Poaceae</i>		<i>Eragrostis lacunaria</i> F.Muell. ex Benth.	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	Poaceae		<i>Panicum effusum R.Br.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Eriachne mucronata R.Br.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Aristida holathera Domin var. holathera</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Eragrostis sororia Domin</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Digitaria brownii (Roem. & Schult.) Hughes</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Amaranthaceae		<i>Gomphrena lanata R.Br.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Site 1
Angiosperm	Poaceae	*	<i>Digitaria ciliaris (Retz.) Koeler</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Cyperaceae		<i>Fimbristylis depauperata R.Br.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff
Angiosperm	Malvaceae		<i>Hibiscus sturtii Hook. var. sturtii</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff
Angiosperm	Asteraceae		<i>Calotis cuneifolia R.Br.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff
Angiosperm	Goodeniaceae		<i>Goodenia hirsuta F.Muell.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff
Angiosperm	Fabaceae		<i>Zornia muriculata subsp. angustata S.T.Reynolds & A.E.Holland</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	Poaceae		<i>Cymbopogon bombycinus (R.Br.) Domin</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Enneapogon</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Alloteropsis cimicina (Retz.) Stapf</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Amaranthaceae		<i>Ptilotus polystachyus (Gaudich.) F.Muell. forma polystachyus</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Aristida jerichoensis var. subspinulifera Henrard</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Setaria surgens Stapf</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Thaumastochloa pubescens (Benth.) C.E.Hubb.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Aristida hygrometrica R.Br.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Urochloa pubigera (Roem. & Schult.) R.D.Webster</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Poaceae		<i>Digitaria ammophila (F.Muell.) Hughes</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff and 34.1km W of N Goonyella Turnoff
Angiosperm	Sterculiaceae		<i>Waltheria indica L.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn
Angiosperm	Cyperaceae		<i>Fimbristylis depauperata R.Br.</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff

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Angiosperm	<i>Myrtaceae</i>		<i>Corymbia clarksoniana</i> (D.J.Carr & S.G.M.Carr) K.D.Hill & L.A.S.Johnson	South Kennedy	Mt Coolon Rd N Side 8.1km W of Lancewood Stn.
Angiosperm	<i>Malvaceae</i>		<i>Hibiscus sturtii</i> Hook. var. <i>sturtii</i>	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff
Angiosperm	<i>Goodeniaceae</i>		<i>Goodenia glabra</i> R.Br.	South Kennedy	Mt Coolon Rd S Side 8.1km W of Lancewood Stn Turnoff
Angiosperm	<i>Poaceae</i>		<i>Enneapogon truncatus</i> Kakudidi	South Kennedy	Along the Suttor Development-Nebo Road
Angiosperm	<i>Poaceae</i>		<i>Digitaria brownii</i> (Roem. & Schult.) Hughes	South Kennedy	Along the Suttor Development-Nebo Road
Angiosperm	<i>Poaceae</i>		<i>Digitaria ammophila</i> (F.Muell.) Hughes	Leichhardt	Along the Suttor Development-Nebo Road
Angiosperm	<i>Poaceae</i>		<i>Bothriochloa erianthoides</i> (F.Muell.) C.E.Hubb.	South Kennedy	Along the Suttor Development-Nebo Road
Angiosperm	<i>Poaceae</i>		<i>Astrebla elymoides</i> F.Muell. ex F.M.Bailey	Leichhardt	Along the Suttor Development-Nebo Road
Angiosperm	<i>Campanulaceae</i>		<i>Wahlenbergia gracilis</i> (G.Forst.) A.DC.	South Kennedy	Suttor Dev Rd CA 900metres W of Junction With Power Transmission Line N Side of Road (P)
Angiosperm	<i>Campanulaceae</i>		<i>Pratia concolor</i> (R.Br.) Domin	South Kennedy	Suttor Dev Rd 0.8km W of Power Transmission Line Site 96/7 (R)
Angiosperm	<i>Poaceae</i>		<i>Eriochloa crebra</i> S.T.Blake	South Kennedy	Along the Suttor Development-Nebo Road
Angiosperm	<i>Poaceae</i>		<i>Panicum decompositum</i> R.Br. var. <i>decompositum</i>	Leichhardt	Along the Suttor Development-Nebo Road

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Angiosperm	<i>Oxalidaceae</i>		<i>Oxalis thompsoniae</i> B.J.Conn & P.G.Richards	South Kennedy	Suttor Dev Rd 0.8km W of Power Transmission Lines Site 96/7 (R) (P)
Angiosperm	<i>Rubiaceae</i>		<i>Spermacoce</i> sp. (Dislyn A.R.Bean 14098)	South Kennedy	Suttor Dev Rd 0.8km W of Power Transmission Line Site 96/7
Angiosperm	<i>Commelinaceae</i>		<i>Commelina ensifolia</i> R.Br.	South Kennedy	Mt Coolon Rd 1.3km E of Power Line (14.5km W of North Goonyella)
Angiosperm	<i>Fabaceae</i>		<i>Vigna radiata</i> var. <i>sublobata</i> (Roxb.) Verdc.	South Kennedy	Mt Coolon Rd 1.3km E of Powerline (14.5km W of North Goonyella)
Angiosperm	<i>Hypoxidaceae</i>		<i>Hypoxis arillacea</i> R.J.F.Hend.	South Kennedy	Mt Coolon Rd 1.3km E of Power Line (14.5km W of North Goonyella)
Angiosperm	<i>Polygalaceae</i>		<i>Polygala</i> sp. (Emerald R.W.Johnson 1322)	South Kennedy	Mt Coolon Rd 1.3km E of Power Line (14.5km W of North Goonyella)
Angiosperm	<i>Asphodelaceae</i>		<i>Bulbine bulbosa</i> (R.Br.) Haw.	South Kennedy	Mt Coolon Rd 1.3km E of Power Line (14.5km W of North Goonyella)
Angiosperm	<i>Casuarinaceae</i>		<i>Casuarina cristata</i> Miq.	South Kennedy	Eaglefield Grid Ref 8454-934193
Angiosperm	<i>Asclepiadaceae</i>		<i>Marsdenia viridiflora</i> R.Br. subsp. <i>viridiflora</i>	South Kennedy	'Eaglefield' Grid Ref 8454-934193
Angiosperm	<i>Euphorbiaceae</i>		<i>Ricinocarpos ledifolius</i> F.Muell.	South Kennedy	'Eaglefield' Grid Ref 8454-934193
Angiosperm	<i>Sapindaceae</i>		<i>Dodonaea stenophylla</i> F.Muell.	South Kennedy	Eaglefield Grid Ref 8454-934193
Angiosperm	<i>Fabaceae</i>		<i>Hovea longipes</i> Benth.	South Kennedy	'Eaglefield' Grid Ref 8454-934193

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Angiosperm	<i>Boraginaceae</i>		<i>Ehretia membranifolia</i> R.Br.	South Kennedy	'Eaglefield' Grid Ref 8454-934193
Angiosperm	<i>Capparaceae</i>		<i>Capparis shanesiana</i> F.Muell.	South Kennedy	'Eaglefield' Grid Ref 8454-934193
Angiosperm	<i>Apocynaceae</i>		<i>Parsonsia lanceolata</i> R.Br.	South Kennedy	'Eaglefield' Grid Ref 8454-934193
Angiosperm	<i>Menispermaceae</i>		<i>Tinospora smilacina</i> Benth.	South Kennedy	Eaglefield Grid Ref 8454-934193
Angiosperm	<i>Caesalpiniaceae</i>		<i>Lysiphyllum hookeri</i> (F.Muell.) Pedley	South Kennedy	Eaglefield Grid Ref 8454-934193
Angiosperm	<i>Acanthaceae</i>		<i>Rostellularia adscendens</i> (R.Br.) R.M.Barker	South Kennedy	68.3km E from Mt Coolon (GPS 21 31 41 147 55 32)
Angiosperm	<i>Myrtaceae</i>		<i>Melaleuca bracteata</i> F.Muell.	South Kennedy	68.3km E from Mt Coolon (GPS 21 31 41 147 55 32)
Angiosperm	<i>Boraginaceae</i>		<i>Ehretia membranifolia</i> R.Br.	South Kennedy	66.1km E of Mt Coolon on Mt Coolon-Lake Elphinstone Rd (GPS 21 31 51 147 54 10)
Angiosperm	<i>Euphorbiaceae</i>		<i>Chamaesyce coghlanii</i> (F.M.Bailey) D.C.Hassall ex P.I.Forst. & R.J.F.Hend.	South Kennedy	66.1km E of Mt Coolon on Mt Coolon-Lk Elphinstone Rd (GPS 21 31 51 147 54 10)
Angiosperm	<i>Myoporaceae</i>		<i>Eremophila mitchellii</i> Benth.	South Kennedy	7m S of Eaglefield Stn
Angiosperm	<i>Malvaceae</i>		<i>Hibiscus brachysiphonius</i> F.Muell.	South Kennedy	13m SE of Eaglefield Stn
Angiosperm	<i>Apocynaceae</i>		<i>Carissa ovata</i> R.Br.	South Kennedy	2m E of 'Eaglefield' Stn

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Angiosperm	<i>Cyperaceae</i>		<i>Cyperus difformis</i> L.	South Kennedy	6m E of Eaglefield Stn
Angiosperm	<i>Poaceae</i>		<i>Aristida latifolia</i> Domin	South Kennedy	9m ESE of Eaglefield Stn
Angiosperm	<i>Poaceae</i>		<i>Aristida latifolia</i> Domin	Leichhardt	Lancewood C 60m WNW of Nebo
Angiosperm	<i>Poaceae</i>		<i>Sporobolus caroli</i> Mez	South Kennedy	9m ESE Eaglefield Stn
Angiosperm	<i>Poaceae</i>		<i>Digitaria brownii</i> (Roem. & Schult.) Hughes	South Kennedy	10m ESE of Eaglefield Stn
Angiosperm	<i>Poaceae</i>	*	<i>Chloris inflata</i> Link	South Kennedy	13m SE of Eaglefield Stn
Angiosperm	<i>Pittosporaceae</i>		<i>Bursaria incana</i> Lindl.	South Kennedy	3m WSW of Eaglefield Stn
Angiosperm	<i>Malvaceae</i>		<i>Hibiscus</i> sp. (Emerald S.L.Everist 2124)	Leichhardt	Lancewood C 60m WNW of Nebo
Angiosperm	<i>Poaceae</i>		<i>Sporobolus scabridus</i> S.T.Blake	South Kennedy	10m SE of Eaglefield Stn
Angiosperm	<i>Poaceae</i>		<i>Paspalidium constrictum</i> (Domin) C.E.Hubb.	South Kennedy	10m ESE Eaglefield Stn
Angiosperm	<i>Poaceae</i>		<i>Panicum decompositum</i> R.Br. var. <i>decompositum</i>	South Kennedy	13m SE Eaglefield Stn
Angiosperm	<i>Mimosaceae</i>		<i>Acacia oswaldii</i> F.Muell.	South Kennedy	24.5km on Road to Moranbah (GPS 21 42 23 147 46 56)

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Poaceae</i>		<i>Eragrostis parviflora (R.Br.) Trin.</i>	South Kennedy	10.3km from Wyena Turn Off W Along Moranbah/Mt Coolon Rd
Angiosperm	<i>Myrtaceae</i>		<i>Eucalyptus persistens L.A.S.Johnson & K.D.Hill</i>	South Kennedy	10km East of Mt Coolan Pub on Rd to Nebo
Angiosperm	<i>Myoporaceae</i>		<i>Eremophila polyclada (F.Muell.) F.Muell.</i>	South Kennedy	500metres N of Pasha Homestead Near Floodplain of Eaglefield Creek (50km S Mt Coolon)
Angiosperm	<i>Rutaceae</i>		<i>Geijera parviflora Lindl.</i>	South Kennedy	34km W of Goonyella
Angiosperm	<i>Poaceae</i>		<i>Aristida lazaridis B.K.Simon</i>	South Kennedy	13m E of Pasha Stn
Angiosperm	<i>Rutaceae</i>		<i>Geijera salicifolia Schott</i>	Leichhardt	CA 50m W of Nebo
Angiosperm	<i>Poaceae</i>		<i>Oxychloris scariosa (F.Muell.) Lazarides</i>	South Kennedy	13m SE of Eaglefield Stn
Angiosperm	<i>Mimosaceae</i>		<i>Acacia fodinalis Pedley</i>	South Kennedy	Riverside Coal Proposal 30km NW Moranbah
Angiosperm	<i>Poaceae</i>		<i>Panicum buncei F.Muell. ex Benth.</i>	Leichhardt	4m W Isaac River & Broadmeadow HS
Angiosperm	<i>Mimosaceae</i>		<i>Acacia fodinalis Pedley</i>	South Kennedy	17m E of Pasha Homestead
Angiosperm	<i>Poaceae</i>		<i>Eriachne mucronata forma (Alpha C.E.Hubbard 7882)</i>	Leichhardt	Broadmeadow HS 2m W of
Angiosperm	<i>Fabaceae</i>		<i>Hovea longipes Benth.</i>	Leichhardt	C 45m W of Nebo Township

Group Name	Family Name	Status	Botanical Name	District Name	Locality
Angiosperm	<i>Poaceae</i>		<i>Dactyloctenium radulans</i> (R.Br.) <i>P.Beauv.</i>	Leichhardt	CA 4m W of Isaac River & Broadmeadow HS
Angiosperm	<i>Poaceae</i>		<i>Cymbopogon refractus</i> (R.Br.) <i>A.Camus</i>	Leichhardt	Broadmeadow HS 2m W of
Angiosperm	<i>Caesalpiaceae</i>		<i>Senna artemisioides</i> subsp. <i>coriacea</i> (Benth.) Randell	Leichhardt	C 45m W of Nebo Township
Angiosperm	<i>Poaceae</i>		<i>Paspalidium gracile</i> (R.Br.) Hughes	Leichhardt	4m W Isaac River & Broadmeadows HS
Angiosperm	<i>Poaceae</i>		<i>Dichanthium sericeum</i> (R.Br.) <i>A.Camus</i> subsp. <i>sericeum</i>	Leichhardt	CA 45m W of Nebo Township
Angiosperm	<i>Poaceae</i>		<i>Eriochloa pseudoacrotricha</i> (Stapf ex Thell.) J.M.Black	Leichhardt	CA 45m W of Nebo Township

Appendix C

Draft Terms of Reference for EIS