Title of Proposal - Wilton Coking Coal Project

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Mining

1.2 Provide a detailed description of the proposed action, including all proposed activities.

The Wilton Coal Project is proposed as a hard coking coal production mine, utilising a shallow open cut method to selectively mine targeted coal seams. The coal mining activity is aiming for an initial operation of 1.65 Mtpa run of mine (ROM) coal, ultimately producing approximately 1.1 Mtpa of product coal. Wilton Coking Coal Pty Ltd intend to bring export quality thermal and coking coal products to market. Exploration drilling confirmed fresh coal at depths shallower than 12m within the seams of the Fairhill and Burngrove formations, and the Burngrove formation is the focus of this project application.
The project aims to excavate the high ash coal of the Burngrove seam using a surface miner to allow stripping of the coal from interburden. The project will then be trucked as raw coal to nearby established mining facilities at Gregory-Crinum to make use of pre-existing wash plant, tailings and rail load out infrastructure. The proposed disturbance area is displayed in the map of the proposed action area provided for question 1.4 of this application. This map includes a proposed haul route for transportation of raw coal offsite that extends beyond the mining lease boundary. It is to be noted that this EPBC Act referral application is limited to the area within the mining lease boundary.
Regarding the mining method, the straightforward mine plan for the Wilton Project involves the use of a WIRTGEN surface miner to continuously strip mine shallow coal from interburden. The surface miner will load mined material into B-Double trucks for direct road transport to Gregory-Crinum for processing. A fleet of 30t excavators will work in conjunction with the surface miner to strip interburden, ensuring efficient collection of raw product.
Disturbance footprint: The mine site will comprise the following land disturbance: an open pit; an overburden dump; office and workshop area; haul roads; site access roads; a ROM pad; a laydown yard and workshop areas as shown on the map submitted for section 1.4.
The total disturbance footprint is approximately 240ha with the project disturbance footprint divided as follows:
Open cut pit 187ha
Clean water dam 3ha
Out of pit overburden dump 17ha
Administration and workshop 5ha
Mine affected water storages 4ha
Run of mine overflow 1ha
Proposed haul road within the Mining Lease 22ha
Mining Fleet: The mining fleet for the Wilton Coal Project is proposed to comprise a standard truck and shovel mining fleet operating in conjunction with a WIRTGEN continuous miner.
Rehabilitation plans: A key element of the proposed Wilton Coal Project is the proponent’s

commitment to progressive rehabilitation. The initial box cut will involve dumping of overburden on the land surface adjacent to the northern boundary of the proposed open cut pit, after which overburden will be backfilled to the previously strip-mined land within the open cut pit. Overburden material will be battered to a slope of 15 degrees.
The backfilled overburden will be topsoiled, ripped and seeded with a vegetation mix in keeping with the surrounding landscape. Rehabilitation design strategies, timeframes and success criteria are included in the Wilton Coal Project Mine Closure Plan, included in the EA application.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
ML700028 and ML700029	1	-23.334513820088	148.57295308857
ML700028 and ML700029	2	-23.33451342084	148.5728893586
ML700028 and ML700029	3	-23.347052946467	148.58462799397
ML700028 and ML700029	4	-23.3606573856	148.5839716019
ML700028 and ML700029	5	-23.364597070853	148.5811949786
ML700028 and ML700029	6	-23.364574027971	148.56112561682
ML700028 and ML700029	7	-23.35092369673	148.55259340517
ML700028 and ML700029	8	-23.348073052484	148.55693557938
ML700028 and ML700029	9	-23.346867763668	148.55726366803
ML700028 and ML700029	10	-23.345337989428	148.55771814137
ML700028 and ML700029	11	-23.34376190015	148.55845006225
ML700028 and ML700029	12	-23.342313457822	148.55977550307
ML700028 and ML700029	13	-23.341247211279	148.56084838668
ML700028 and ML700029	14	-23.339613249176	148.56235042373
ML700028 and ML700029	15	-23.338801923518	148.56325926301
ML700028 and ML700029	16	-23.337735747384	148.5646224689
ML700028 and	17	-23.335197694979	148.56827027381

Area	Point	Latitude	Longitude
ML700029			
ML700028 and ML700029	18	-23.335753994917	148.57147626403
ML700028 and ML700029	19	-23.334513820088	148.57295308857

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

The Wilton Coal Project tenement lies approximately 45km northeast of Emerald, 50km northwest of Blackwater and approximately 280km northwest of Gladstone, in Queensland's Bowen Basin. The project is in close proximity to other coal mines, infrastructure and coal deposits. The Gregory Branch of the main Blackwater rail line runs adjacent to the project tenement and connects with the coal export terminals at Dalrymple Bay Coal Terminal south of Mackay.

The Wilton tenement encompasses two mining leases (ML700028 and ML700029), as detailed in a mining lease application currently undergoing assessment by the Department of Natural Resources, Mines and Energy. Both mining leases overlie pastoral property with cattle grazing as the dominant land use.

The Wilton Coal Project proposed disturbance footprint consists of a long plateau ridge running north-south through the centre of the project area. The elevation of the area ranges from 170m Australian Height Datum (AHD) at the south-eastern boundary to 300m AHD on the ridge top. The plateau slopes gently to the west and has a steep drop to the east, with slopes of 10% or more. Beyond the plateau to the east and north of the Wilton Coal Project, slope decreases to less than 1%.

The eastern edge of the ridge that runs north-south through the Wilton Coal Project is the steepest part of the site and remains largely uncleared.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

270ha

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Lot 2 SP254309

1.8 Primary Jurisdiction.

Queensland

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 08/2019

End date 08/2025

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

Although the entirety of the Mining Lease Application Area is within the boundaries of Isaac Regional Council, those mining activities are not assessable development and do not trigger assessment against the local planning scheme. However, the proposed haul road from the Wilton mine site to Gregory-Crinum CHPP for coal processing, is within the boundaries assessed under the Central Highlands Regional Council Planning Scheme 2016. The Haul Road will connect to Lilyvale Road, listed as a Local Road of Regional Significance. Consequently, there may be a requirement to develop a Traffic impact assessment pursuant to Schedule 6 (SC6.3.7) of that planning scheme.

The following legislation is relevant to the current proposed action, and will need to be addressed during the planning and approvals phase of this project:

Commonwealth

· *Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act)*

Queensland State

Environmental Protection Act 1994 (EP Act)Regional Planning Interests Act 2014Mineral Resources Act 1989Aboriginal Cultural Heritage Act 2003Water Act 2000Nature Conservation Act 1992Vegetation Management Act 1999

Exemptions exist for mining activities under *the Sustainable Planning Act, 2009*, and subordinate State Development Assessment Provisions (SDAP). The Planning Act and associated regulation does not apply to development authorised under the *Mineral Resources Act 1989* (Part 3, 4a of the Mineral Resources Act). An application for an Environmental Authority (EA) has been made to undertake an environmentally relevant activity (ERA), pursuant

to the *Environmental Protection Act 1994*.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

The Western Kangoulu people are the traditional owners of lands underlying the proposed Wilton project area. The Western Kangoulu people's Traditional Country is the area surrounding Emerald. They currently have a registered Native Title Claim (QC2013/002) over this area. This claim replaces previous claims in place including QC98/25 and QC99/6. Lumburra Bimbi is the corporate identity for the Western Kangoulu people. Lumburra Bimbi recognises the land under the title claim for the Western Kangoulu people is heavily disturbed by the mining and energy sectors. Under the previous iteration of the Wilton Coal Project by QCIH, representatives from Lumburra Bimbi were involved extensively in cultural heritage search and clearance for exploration drilling areas around EPC1235, which includes the area around the currently proposed Wilton project disturbance.

In the future, there are plans to establish a closure committee to effectively co-ordinate stakeholder consultation and planning for the closure of the Wilton Coal Project. The committee should include key Wilton Coking Coal Pty Ltd personnel in the closure process as well as interested stakeholders and community members and should be established in the short term (i.e. within the first year of operations).

The scope of the committee is to provide a forum for community members, groups and/or organisations with a strong interest in the mine closure process undertaken by Wilton Coking Coal Pty Ltd to receive regular updates on activities and processes and provide feedback in relation to the closure of the Wilton Coal Project. Suggested committee members to be included are provided below:

- Wilton Coking Coal Pty Ltd General Manager (chairperson)

- Wilton Coking Coal Pty Ltd Community Liaison

- Wilton Coking Coal Pty Ltd Environmental Advisor

- Wilton Coking Coal Pty Ltd earthworks contractor representative

- Local traditional owners

- Interested stakeholders including (but not limited to) relevant landholders and the Central Highlands Regional Council.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

An application for an environmental authority has been submitted for the Wilton Coal Project as required by Queensland's *Environmental Protection Act 1994* (EP Act).

The environmental authority application relies on information from multiple environmental assessments carried out on the Wilton project area. Environmental assessments feed into technical reports, which in turn provide the information upon which the guideline responses for activities with impacts to air, noise, land, waste and water are based.

The environmental assessments that have been carried out at the Project to support and inform the Wilton Coal Project environmental authority application include:

An air quality assessment which addresses the following issues: the existing environment; air quality goals; an air emissions inventory; the likely change in air quality following commencement of operation; recommendations for ongoing operation.A noise and vibration assessment which addresses the following issues: a description of existing noise conditions; the likely change in noise environment following development of the mine; the development of appropriate noise and vibration goals; an assessment of noise at sensitive receptors and comparison to the noise and vibration goals; and, recommendations for relevant impact mitigation measures.A flora and fauna assessment which assesses: the terrestrial flora and fauna biodiversity values within the study area; the presence and status of species and communities within the local area; and, the potential ecological impacts of the project and recommendations for mitigating impacts, with a focus on species and communities of conservation concern, such as those listed under State and Commonwealth legislation.A soil and land suitability assessment which provides: a description and mapping of the soil variation and distribution across the study area; an assessment of the soil for land suitability and Good Quality Agricultural Land (GQAL) for grazing and rainfed cropping across the study area; a validation assessment of areas included in the Strategic Cropping Area trigger mapping within in the study area; and, an assessment of the soil for recommendation on topdressing material suitability.

A geochemical characterisation of waste rock to predict the potential for acidic, metalliferous or saline mine drainage.

A water management assessment which includes: information on surface water flows in the project area and site layout options for water management structures; a hydrological assessment including flood hydrology, flood modelling and identification of local/regional water quality and groundwater; development of a mine site water management system including modelling of the proposed system, water management layout, diversions, storage systems and contaminant sources; a preliminary consequence category assessment; expected impacts on existing hydrology and flooding; post mining water management aspects relating to final landform drainage systems and final voids; and, surface water and groundwater monitoring requirements.

A groundwater assessment which provides a description of groundwater resources of local and regional extent that are relevant to the project including: hydrogeological features of aquifers such as extent, yield, groundwater flow direction and velocity; physico-chemical composition of non-impacted groundwater; and, environmental values (EVs) of groundwater resources.

Based on the information provided in the environmental assessments and technical reports, each of the environmental authority guideline response documents address the relevant impacts of the project to environmental values and propose management practices to address the identified impacts.

Examples of identified relevant impacts of the Wilton Coal Project that require proactive management include:

Releases to surface water: The mine's position in the headwaters of the local catchment poses a risk for release of potentially mine impacted water. Release would only ever be allowed in times of flow, which will be rainfall-dependent in the highly ephemeral waterways around the proposed disturbance area. The risk of impact to downstream waterways from unplanned or uncontrolled release has been rated as low. Control strategies for the containment of mine impacted water are discussed at length in the water management assessment that forms part of the Wilton Coal Project environmental authority application.

Significant fauna species: The Squatter Pigeon has been recorded in close proximity to the study area and is considered likely to occur within the proposed disturbance footprint on occasion. Vehicle strike represents a general threat to native fauna species, but threat is particularly relevant to the Squatter Pigeon, which is a ground-dwelling species that often occurs on roads and tracks. A number of controls are recommended in the environmental authority application to minimise the likelihood of vehicle strike in general, with a focus on reducing the likelihood of death or injury to Squatter Pigeons if present.

Significant vegetation communities: The proposed disturbance area contains areas of remnant vegetation shown on the DNRME regional ecosystem (RE) mapping. The type and extent of remnant vegetation associated with the project was subject to multiple ground-truthing vegetation assessments. The outcomes of these assessments supported the DNRME mapping over some parts of the proposed project area, but some areas were subject to a vegetation mapping amendment request. The mapping amendment request was provided to the Department of Environment and Science on 3 August 2018 and subsequently forwarded to the Queensland Herbarium for assessment. At the time of writing, a response from the herbarium is still pending.

The hierarchy of controls for reducing impacts to significant matters was applied to areas of mapped remnant vegetation. Through this process, the infrastructure layout of the project was modified to avoid disturbance to areas supporting endangered REs by design. On the basis of implementing the avoidance by design approach, disturbance to remnant vegetation associated with the proposed project is limited to communities with a 'least concern' status under the *Vegetation Management Act 1999*.

The project design involves some disturbance to remnant vegetation (with a 'least concern' status) associated with watercourses. This proposed disturbance is almost exclusively limited to areas associated with the target resource itself and cannot be avoided by design. Remnant vegetation associated with a watercourse or shown on the Vegetation Management Watercourse Map (as certified under the *Vegetation Management Act 1999*) is classified as a MSES under the Queensland environmental offsets framework. A financial settlement offset is the proposed delivery mechanism for offsetting impacts to this matter and the financial settlement offset is proposed to be delivered in full prior to the commencement of the action.

Further information is provided in Sections 2 and 3.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Brigalow (Acacia harpophylla dominant and co-dominant)	Three TECs were identified in the Protected Matters Report as potentially occurring within the study area or within a 30km radius: *

Species	Impact
	Brigalow (Acacia harpophylla dominant and co-dominant). * Natural grasslands of the Queensland Central Highlands and northern Fitzroy Basin. * Weeping Myall Woodlands. Ground-truthing assessments revealed no vegetation communities consistent with any of the TECs listed under the EPBC Act to occur within the project footprint. There are no areas of ‘natural grasslands’ or ‘Weeping Myall woodlands’, and while habitats supporting Brigalow (Acacia harpophylla) are present, there are no areas of Brigalow vegetation within the project footprint that are consistent with the ecological community listed under the EPBC Act. Brigalow occurs as a minor component in association with Thozet’s Box (Eucalyptus thozetiana) in mapped areas of RE 11.7.1 (see further details inn Attachment 3). This RE is not equivalent to the Brigalow ecological community listed under the EPBC Act, as Brigalow forms only a minor part of the community. RE 11.7.1 is not listed as a state-equivalent in the Approved Conservation Advice for Brigalow (Acacia harpophylla dominant and co-dominant) ecological community. RE 11.9.1, a state equivalent vegetation community for the endangered Brigalow TEC, was the only equivalent regional ecosystem (RE) for any of the listed TECs that is mapped within the disturbance footprint of the proposed action. Under the Regional Ecosystem Description Database (REDD) (Queensland Herbarium, 2018) RE 11.9.1 is described as Acacia harpophylla-Eucalyptus cambageana woodland to open forest on fine-grained sedimentary rocks. The current Queensland RE mapping shows three areas comprising RE 11.9.1 relevant to the proposed action. All areas that are mapped as supporting State-equivalent units of the Brigalow TEC were the subject of significant ground-truthing survey effort. A report was prepared to support a vegetation mapping amendment request with the Queensland Herbarium to support the outcomes of the ground-truthing assessment (NRC, 2018; Attachment 4). Two distinct vegetation associations were observed with respect to mapped areas of RE 11.9.1: 1. A

Species	Impact
	woodland community dominated by Brigalow (Acacia harpophylla) – characteristic of RE 11.9.1 and equivalent to the Brigalow TEC. 2. An open woodland community dominated by Silver-leaved Ironbark (Eucalyptus melanophloia) and/or Mountain Coolabah (Eucalyptus orgadophila), with Red Bloodwood (Corymbia erythrophloia) frequently present. – characteristic of RE 11.9.2. Not equivalent to the Brigalow TEC. The ground-truthed extent of this MNES is shown on the 'Matters of National Environmental Significant Map' in Attachment 1. The outcome of the ground-truthing assessments is that all areas that support habitat that equates the listed Brigalow community have been avoided by design. There will be no direct impacts to this community from the proposed action. Detailed impact assessment against the Significant Impact Guidelines 1.1 - Matters of National Environmental Significance is provided in Attachment 1. It was noted during the ground-truthing surveys that all areas equivalent to the Brigalow TEC were dominated by exotic pasture species in the ground layer. In which case, these areas are not consistent with the condition thresholds identified in the Approved Conservation Advice, whereby, exotic perennial plants comprised greater than 50% of the total vegetation cover of the patch. Nonetheless, as a precautionary approach all of these areas have been avoided by design to ensure risks of significant impacts to the listed community are avoided. Given the extent of existing disturbance, and that the project is unlikely to significantly modify any abiotic factors relevant to the communities survival, the proposed action is unlikely to result in significant indirect impacts to the listed community.
King Bluegrass (Dichanthium queenslandicum)	This endangered flora species is endemic to central and southern Queensland where it occurs in three disjunct populations: 1) Hughenden district; 2) from Nebo to Monto and west to Clermont and Rolleston; and 3) Dalby district, Darling Downs. Its area of occupancy is unknown, however based on the extent of occurrence it is likely to be restricted. The main identified threats to this species are habitat loss

Species	Impact
	through agricultural and mining activities, road construction and other infrastructure developments, and weed invasion resulting in competition and potential displacement (TSSC, 2013 and references therein). King Bluegrass is found on black cracking clay soils mainly in association with other Dichanthium species and in natural grassland communities. Despite desktop analyses identifying this species as having a high likelihood of occurring within the project area, NRC (2017) did not detect this species during the targeted surveys in the field survey program. Additionally, SHG (2011) did not detect this species during baseline studies within the broader EPC. No native grassland communities were identified within the study area. All grasslands recorded were severely impacted by cattle grazing and dominated almost exclusively by highly palatable introduced species including Buffel Grass (Cenchrus ciliarus) and Indian Bluegrass (Bothriochloa pertusa). As this species was not detected within the study area or the broader EPC, and the habitat relevant to the project is highly modified and/or unsuitable for this species, is unlikely that the proposed action will lead to a long-term decrease in the size of a population or fragment an existing population. No native grasslands were recorded during baseline surveys within the study area and grasslands that were recorded were dominated almost entirely with exotic species and degraded due to cattle grazing. Based on this, no suitable habitat for King Bluegrass is found within the study area and the proposed action will not significantly amplify impacts to, or the quality of, habitat currently available to this species. Through the implementation of industry-standard biosecurity measures, it is unlikely the proposed action will introduce additional invasive species or any disease into the vicinity of the project area that may cause King Bluegrass to decline. Assessment against the relevant significant impact criteria is included in the MNES Impact Assessment Report attached to this referral as Attachment 1.
Northern Quoll (Dasyurus hallucatus)	Historically common across northern Australia

Species	Impact
	and occurring almost continuously from the Pilbara to near Brisbane, the Northern Quoll now occurs in five regional populations across Queensland, the Northern Territory and Western Australia. In Queensland, this species is known to occur as far south as Gracemere and Mt Morgan, south of Rockhampton, as far north as Weipa and extends west to the vicinity of Carnarvon Range National Park. This species' distribution is highly fragmented in the state and surveys indicate severe reductions from the species' former distribution. This species occupies a diversity of habitats across its range, including rocky areas, forests, woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert (DoE, 2016; DEE, 2019, and references therein). Due to the study area being within the species modelled distribution and potentially suitable habitat occurring within the vicinity of the project area, the likelihood of occurrence for this species was deemed as moderate. However, the nearest record of this species with respect to the proposed action is approximately 90km west of the study area. This species was specifically targeted during the flora and fauna baseline survey (NRC, 2017) using multiple survey techniques (e.g. cage traps and camera traps), as recommended in the 'EPBC Act referral guideline for endangered northern quoll' (DoE, 2016), and no evidence of this species was detected within the study area. The study area includes several habitat types consistent with the broad spectrum of habitats that this species is known to occupy. However, during baseline flora and fauna studies, no microhabitat qualities of intrinsic value to this species were identified. Given the lack of local records, current distribution of identified fragmented populations, and the absence of evidence of this species occurring within the study area during baseline flora and fauna surveys it is unlikely that this species occurs within habitat in the vicinity of the proposed action. The Northern Quoll is not known from the remnant habitat areas associated with the proposed action. The relevant habitats associated with

Species	Impact
	the proposed action area are highly isolated from remnant areas where the Northern Quoll is known to occur, through vast areas of cleared grazing land. Therefore, the local area supports limited connectivity to surrounding remnant areas and a reduced likelihood of Northern Quoll immigrating into habitat in the vicinity of the proposed action. Overall, there is low-quality habitat and connectivity values for this species within the proposed disturbance area. Habitat within the proposed disturbance area does not support any 'important habitat' values, nor is it likely to support an 'ecologically significant proportion of the population'. It is unlikely there will be a significant impact to this species as a result of the proposed action. Assessment against the relevant significant impact criteria is included in the MNES Impact Assessment Report attached to this referral as Attachment 1.
Red Goshawk (Erythrotriorchis radiatus)	This species is very sparsely distributed from the western Kimberly area in Western Australia to north-eastern New South Wales (Marchant & Higgins, 1993). It typically occurs in coastal and sub coastal areas in wooded and forested lands of tropical and warm-temperate Australia (Marchant & Higgins, 1993). It nests in large trees, typically less than one kilometre from a permanent water source (Aumann & Baker-Gabb, 1991). The home range for this species is very large, between 50 and 220km2 (Debus & Czechura, 1988) and the study area is within the known distribution of this species. Several threats have been identified for the Red Goshawk, which include a reduction in prey abundance through overgrazing, the degradation of wetland habitats and the loss of hollow bearing trees. Other recognised threats to the Red Goshawk include altered fire regimes, disease, and habitat fragmentation and degradation from agriculture, urban development and forestry operations (DEE, 2019). Despite one local record of this species identified during desktop studies, no evidence of this species was detected during any of the baseline flora and fauna surveys. Given that this species is sparsely distributed and occupies large home ranges, it is possible that

Species	Impact
	this species may utilise airspace over the study area or use local vegetation as part of a much larger home range. However, the baseline flora and fauna study did not detect any unique habitat features for the Red Goshawk. Rather, the vegetated parts of the study area are characteristic of habitats in the surrounding landscape. Overall, the low-quality habitat for this species within the proposed disturbance area is common within the broader region and does not support any 'important habitat' values, nor is it likely to support an 'ecologically significant proportion of the population'. It is unlikely there will be a significant impact to this species as a result of the proposed action. Assessment against the relevant significant impact criteria is included in the MNES Impact Assessment Report attached to this referral as Attachment 1.
Squatter Pigeon (southern) (Geophaps scripta scripta)	The distribution of this species extends southwards from the Burdekin-Lynd divide to southeast Queensland, southwest to Stanthorpe, near the Queensland-NSW border, south along the western slopes of the Great Dividing Range to the area around Glenn Innes, NSW, west through the Gwydr River region to Bellata, and north-westwards through Goondiwindi and the Brigalow Belt in Queensland to Charleville. The subspecies was once widespread and abundant throughout NSW and QLD, however substantial range contractions have occurred throughout much of NSW since the 1870s. Therefore, the majority of the population of this subspecies currently occurs within QLD. Habitat for this species is generally defined as open-forests to sparse, open-woodlands and scrub that are mostly dominated in the overstorey by Eucalyptus, Corymbia, Acacia or Callitris species (DEE, 2019, and references therein). The species is nearly always found near permanent water such as rivers, creeks and waterholes. Sandy areas dissected by gravel ridges, which have open and short grass cover allowing easier movement are preferred. It is less commonly found on heavier soils with dense grass. It often occurs in burnt areas and is sometimes found on tracks and roadsides (TSSC, 2015a).

Species	Impact
	Breeding for this species occurs mostly in the dry season, however may be opportunistic with abundant rainfall. This species nests on the ground in an area somewhat hidden by overhanging grass, bushes, or logs (Morcombe, 2003). The greatest threat to this species is through predation from invasive species such as feral cats and foxes. Additional threats to this species include the loss, fragmentation, and degradation of habitat for agricultural purposes and the introduction of invasive weeds such as Buffel Grass. This species was considered to have a high likelihood of occurrence within the vicinity of the proposed action due to the presence of local records and locally suitable habitat. This species was not recorded within the project area or immediate locality for the proposed action during the baseline surveys. The baseline flora and fauna studies conducted by NRC (2017) identified an incidental observation to the north of the proposed action. This observation was on the side of a track >3 km from the proposed action in habitat not associated with the proposed action. Nonetheless, the presence of local records of this species and the incidental observation in neighbouring habitat indicates this species has some potential to occur within the project area of the proposed action. General observations on the habitat values within the project area indicate these values are of limited value for the Squatter Pigeon. Much of the project area is located on areas of improved pasture, with dense grass cover on relatively heavy soils. These areas do not support preferred feeding or breeding habitat for Squatter Pigeons. Where the project area overlaps with remnant habitats, these habitats are typically located on slopes that are not consistent with the description for breeding and foraging habitat provided in DEE (2019): In Queensland, Squatter Pigeon (southern) foraging and breeding habitat is known to occur on well-draining, sandy or loamy soils on low, gently sloping, flat to undulating plains and foothills. In general, the habitats recorded within the disturbance footprint for the project are of low value for the Squatter Pigeon, and this is reflected by the

Species	Impact
	absence of observations during the field surveys. Higher value habitat for this species occurs on the top of the ridge/plateau in habitat supporting regional ecosystem 11.5.9b. This habitat has been avoided by design, and therefore it is unlikely there will be any significant direct impacts to this species or species habitat as a consequence of the proposed action. The potential for indirect impacts to this species is primarily related to disturbances that may occur in adjacent habitats, such as vehicle strike. Impact mitigation strategies for such impacts are provided in Section 4 of this referral and the MNES Impact Assessment Report (Attachment 1). Overall, the low-quality habitat for this species within the proposed disturbance area and the proposed disturbance area does not support any ‘important habitat’ values, nor is it likely to support an ‘ecologically significant proportion of the population’.
Koala (Phascolarctos cinereus)	Koalas habitat can be broadly defined as any forest of woodland containing species that are known food trees. The diet of the Koala is mainly restricted to foliage of Eucalyptus spp.; however, it may also consume foliage of related genera, including Corymbia spp., Angophora spp. and Lophostemon spp. (DEE, 2019). The proposed action is within the modelled distribution for Koala and the WO database extract returned nine records within a 30km radius of the study area. The study area contains some habitats that support Koala food trees, mainly Thozet’s Box woodland (RE 11.7.1) and Narrow-leaved Ironbark open woodland (RE 11.5.9). These REs form part of a mosaic of habitats in a relatively large remnant unit associated with the plateau to the west of the proposed action. Remnant vegetation within the proposed disturbance area that supports potentially suitable habitat for the Koala is limited to the RE 11.7.1 community that occurs on the margin of the remnant unit. Targeted surveys were conducted in areas supporting food trees, including searches for scats and claw marks. No evidence of the Koala was observed anywhere within the study area. A habitat assessment

Species	Impact
	was conducted in accordance with the EPBC Act Referral Guidelines for the vulnerable Koala (2014). The full results can be found in the MNES Impact Assessment Report attached to this referral. The brief outcomes of this assessment was that the proposed disturbance area scored a 6 for Koala habitat assessment. The decision is that, while there are no records of the Koala that are of significant relevance to the study area, the site contains habitat that may be important to the Koala. Key outcomes from the habitat assessment tool were: - There is no evidence of any Koalas within 2km of the edge of the impact area within the last 10 years. - Emergent trees of at least two species that are known as Koala food trees are present. - The study area is part of a contiguous landscape. - The study area has some degree of dog or vehicle threat present. - Habitat within the study area is potentially important for achieving the interim recovery objective. Despite the presence of moderate habitat values for the Koala within the disturbance footprint of the proposed action no habitat critical to the survival of this species is likely to be impacted by the proposed action. Furthermore, habitat clearing associated with the proposed action would occur on the outer margin of the large remnant unit and would not result in fragmentation or isolation of any habitats. Approximately 165ha of remnant vegetation, as shown on the current regional ecosystem map, is proposed as being impacted which is part of a large tract of similar remnant vegetation comprising approximately 2,330ha, and the proposed impact therefore represents 7% of the total remnant unit. Although there is no known current occurrence of Koalas in the local area, if Koalas are present the proposed action will not impact the habitat to the extent that essential life history stages would be compromised within the larger remnant unit nor is it likely to impact on an ‘ecologically significant proportion of the population’ if present at all. It is unlikely there will be a significant impact to this species as a result of the proposed action. Assessment against the relevant significant impact criteria is included in the MNES Impact Assessment

Species	Impact
	Report attached to this referral as Attachment 1.
Ornamental Snake (Denisonia maculata)	The Ornamental Snake species is known only from the Brigalow Belt North and parts of the Brigalow Belt South biogeographical regions. The core of the species' distribution occurs within the drainage system of the Fitzroy and Dawson Rivers. The preferred habitat of this species is within, or close to, habitat that is favoured by its prey – frogs. The species is known to prefer woodlands and open forests associated with moist areas, particularly gilgai mounds and depressions, but also lake margins and wetlands (DEE, 2019, and references therein). This otherwise sparsely occurring species is recorded to be easily detectable (DEE, 2019) and occur in high population densities in suitable habitats (Wilson, 2015). One record on the Atlas of Living Australia, is located approximately 20km to the southeast of the study area (ALA, 2019). Additionally, baseline flora and fauna surveys conducted by Saunders Havill Group (SHG, 2011) detected an individual of this species within the broader Wilton EPC, approximately 8km to the northwest of the proposed action. Several threats have been identified for this species and include: habitat loss, fragmentation and degradation, alteration of landscape hydrology in and around gilgai environments, impacts to water quality and sediment pollution, contact with Cane Toads, predation by feral species, and invasive weeds (DEE, 2019). Due to the presence of local records and suitable habitat occurring to the north of the study area there is a moderate likelihood of this species occurring within the study area. Potentially suitable habitat within the proposed disturbance footprint is marginal for this species, with the project area being characterised by rocky slopes or cleared open pasture. Some heavily degraded areas with very minor gilgai microrelief and minor drainage features are present within the eastern portion of the footprint of the proposed action. Several species of frog – the preferred prey item of the Ornamental Snake – were located around the stock water dam and other water small water

Species	Impact
	bodies with relevance to the proposed action. These areas provide some low-value isolated foraging habitats for this species; however, no individuals were detected during baseline flora and fauna surveys by NRC (NRC, 2017). Given these modified or degraded areas are impacted through agricultural practices they are unlikely to provide critical habitat for the species. Overall, the low-quality habitat for this species within the proposed disturbance area is common within the broader region and does not support any 'important habitat' values, nor is it likely to support an 'ecologically significant proportion of the population'. It is unlikely there will be a significant impact to this species as a result of the proposed action. Assessment against the relevant significant impact criteria is included in the MNES Impact Assessment Report attached to this referral as Attachment 1.
Yakka Skink (Egernia rugosa)	This species is found from the Queensland/New South Wales border north to southern Cape York Peninsula (TSSC, 2014a), occurring in a variety of habitat types including woodlands and open forests of Poplar Box, Brigalow, Ironbark, Cypress Pine, Mulga, Bendee, and Lancewood (DEE, 2019). Preferred habitats are areas that contain large logs, tree stumps or rocks under which burrows can be created. This extremely secretive species produces live young and co-inhabits an area in family groups. Family groups may occupy several sites during the year. This species retreats to the communal burrow at the first sign of disturbance, however occupied cavities can be identified by scat piles near the entrance. These scat piles aid in detecting this species within an area in the absence of visual confirmation of individuals. Several threats have been identified for this species, including: habitat reduction and degradation, predation from feral animals such as cats and foxes, as well as other impacts from rabbits. Additionally, this species exhibits high site-fidelity, low fecundity and are long-lived. The combination of these biological factors makes this species susceptible to potential population crashes or local extinctions given prolonged unfavourable conditions or sudden, large environmental

Species	Impact
	disturbances. During the baseline flora and fauna study by NRC (2017) potentially suitable habitat for this species was identified in remnant vegetation within the western portion of the proposed action disturbance footprint. Potentially suitable habitat was characterised by woodland dominated by Thozet's Box as basally hollowed/fissured sections of trees were commonly observed. In addition to this, large woody debris was observed in some areas, however areas of large rocks were absent. Despite potentially suitable habitat for this species being identified within the vicinity of the proposed action disturbance footprint, no evidence of this distinctive but cryptic species was detected during baseline flora and fauna surveys (NRC, 2017). Overall, the low-quality habitat for this species within the proposed disturbance area is common within the broader region and does not support any 'important habitat' values, nor is it likely to support an 'ecologically significant proportion of the population'. It is unlikely there will be a significant impact to this species as a result of the proposed action. Assessment against the relevant significant impact criteria is included in the MNES Impact Assessment Report attached to this referral as Attachment 1.

2.4.2 Do you consider this impact to be significant?

No

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on any part of the environment in the Commonwealth marine area?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

The flora and fauna relevant to the project area has been determined through preparation of multiple technical reports that are also attached to the referral, and include:

- Wilton Coal (EPC1235) Flora and Fauna Technical Report - conducted by Saunders Havill Group (SHG) for the late dry season period in 2011. (Attachment 2)

- Wilton Coal Project Terrestrial Flora and Fauna Technical Report – conducted by Northern Resource Consultants Pty Ltd (NRC) for the wet season 2017 period. (Attachment 3)

- Wilton Coal Project Regional Ecosystem Mapping Amendments (Attachment 4)

Surveys undertaken by Saunders Havill Group (2011) covered the broader Exploration Permit Coal area (EPC 1235), and while the survey included flora and fauna communities representative of the current proposed action, they did not have any survey sites within the disturbance footprint of the current proposed action. An additional flora and fauna survey was carried out by NRC (2017) specifically within the project area for the current design of the proposed action. An additional survey was undertaken by NRC (2018) to amend RE mapping within the proposed disturbance area. This survey specifically focused on delineating a large mixed polygon of RE 11.9.1/11.9.2 to individual vegetation communities.

No threatened flora species were recorded within the proposed disturbance area during the baseline studies. A total of 118 flora species from 45 families were recorded from vegetation transects within the project area for the proposed action. This list includes 15 introduced species (12.7%). A list of flora and fauna species identified is included in Appendix E and F respectively of the Terrestrial Flora and Fauna Technical Report (NRC 2017) attached to this application.

No fauna species listed as threatened or migratory under the EPBC Act were detected during the ecological survey (NRC 2017). A total of 105-107 fauna species were identified within the study area using a variety of different observation and trapping techniques. This included 71 birds, 13 reptiles, 24 native mammals (including 13-15 microbat species), and eight native amphibian species.

Eight migratory species were predicted to occur within 30km of the study site during desktop assessments. Each of these species are highly mobile with large distributions and broad habitat requirements and are unlikely to be significantly impacted by the proposed action.

An assessment of the likelihood of occurrence and potential for significant impacts to all threatened flora and fauna species is included in the MNES Impact Assessment Report

(Attachment 1).

3.2 Describe the hydrology relevant to the project area (including water flows).

Surface water

The project is located on the boundary of the Lower Nogoa River / Theresa Creek sub-basin and the headwaters of the Mackenzie River sub-basin, with the proposed disturbance situated in the catchment area of Mackenzie River north-western tributaries as shown in Appendix A of the atthaced technical report.

The streams (Boggy Creek and tributaries) in the south-west of the project area flow into the Nogoa River just upstream of its confluence with the Mackenzie River, while all other streams flow directly into the Mackenzie River (including Sandy, Cattle and Frying Pan Creeks).

The majority of the project site has been altered by past agricultural practices (light to medium density cattle grazing) and associated road and rail tracks. The impacts of these activities, including land clearing, weed invasion, and accelerated erosion processes are observed in the project area. The project area experiences substantial temporal variability in rainfall and the drainage network is highly ephemeral.

Since the Wilton Coal Project site is positioned along the elevated drainage divide, the creek network is not well developed and is ephemeral. The main channel of the Nogoa River itself is relatively deep and well defined; however, its closest approach to the Wilton Coal Project site is approximately 7 km to the south-west. Similarly, the main channel of the Mackenzie River, while briefly crossing the Wilton Coal Project site in the far north-western corner, is approximately 6 km to the north-east of the lease area. The temporal variation in rainfall throughout the year (higher rainfall between December and February, with low rainfall from May to August) may result in seasonal changes in recharge rates and subsequent fluctuations in the water table. Consequently, this might result in changes in water chemistry and quantity throughout the site on both a seasonal and annual scale.

Groundwater

Based on the information from bores logs and exploration drilling undertaken at WCP, it is evident that locally, two aquifer systems occur on the mining lease:

A series of shallow aquifers within the upper alluvium which extends to approximately 10 m depth, and fractured rock aquifers associated with the coal reserves of the Upper Permian Burngrove Formation and Fair Hill Formation. The aquifers within this system are believed to be confined.

Yield within the alluvial units is considered low as evident from aquifer yield in monitoring bore WMB04S. Groundwater sampled from the Permian aquifer/s has variable but consistently high electrical conductivity (EC). EC varies from between 12,000-27,000 µS/cm and pH between 6.7 and 8.2.

Burngrove Formantion

The coal seams targeted in the WCP are the Scorpio and Centaur coal seams within the Burngrove Formation. Typically, the coal seams and adjacent overburden/interburden constitute the main water-bearing layers within the Burngrove Formation. Water-bearing materials include coal, fractured sandstone, siltstone and mudstone. Airlift yields recorded for registered bores screened in Burngrove Formation ranges between 0.5 to 1 L/s.

As shown in the atthaced report, groundwater at the WCP has been intersected in the Burngrove Formation by existing groundwater monitoring bores (at depths of 14–30 m), as well as in a registered farmer's bore (RN89380 at a depth of 43 m). This farmer's bore is the only known registered bore at the WCP that is actively being pumped for stock water use. Furthermore, it is just outside of the proposed ML (western corner) and approximately 1 km west of the proposed pit disturbance area. As a result, the potential impacts of proposed mining activities on the aquifer and groundwater tapped by this farmer's bore has been assessed in this report.

Fairhill Formation

The Fairhill Formation underlies the Burngrove Formation. Although the Fairhill Formation coal seams are not the target of the WCP, groundwater exists in the Fairhill Formation within and surrounding the proposed pit disturbance.

Groundwater was encountered in the Fairhill Formation further than 1.5 km north of the proposed ML (e.g. W-GWB2, W-GWB4, W-GWB5 and W-GWB6) at depths ranging from 22–84 m below ground.

The closest bores to the proposed mine that are screened in the Fairhill Formation are WMB01 and WMB02 that intersected groundwater at depths of 37 m and 21 m, respectively. Moreover, a registered farmer's bore (RN90140) approximately 1.2 km east of the proposed ML intersects groundwater at a depth of 8 m for stock water use (see map in Appendix A of the atthaced technical report). This necessitates the assessment of potential impacts to regional groundwater resources within the Fairhill Formation.

Yield from WMB01 was measured at 0.0058 L/s in August 2018. The low yield is not surprising given groundwater was found in shale which is known to have a very low permeability of the order of 1×10-12 to 1×10-10 m/s (Freeze and Cherry, 1979). Due to the low yield and low permeability of the strata, it is evident WMB01 intersects an aquitard and not an aquifer.

The hydrologic cycle at the WCP site is dominated by low rainfall, high evaporation rates and limited diffuse recharge, which largely occurs uniformly over the landscape (Scanlon et al., 2002). As a result, groundwater is generally brackish to saline with only a few isolated locations able to produce small pockets of fresh groundwater. The DES (2011), then Department of Environment and Heritage Protection, published a selection of maps visualising several groundwater characteristics for the greater Fitzroy Basin. The maps confirm that the WCP site is in a low rainfall, low recharge area of the Highlands Groundwater Management Area of the Water Plan (Fitzroy Basin) 2011.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

Mapping by the Australian Soils Atlas shows the disturbance area within the project area for the proposed action is dominated by thin-surfaced loamy duplex soils, often of shallow depth and with some rock outcrop. Flatter slopes or low sloping plains have cracking clays with some deeper clays in lower sites. On many clay soil slopes a prominent linear gilgai is evident. Almost all soils are commonly strewn with small fragments of silicified wood, ironstone , and billy and small gravel.

Along the plateau and ridge along the western side of the project area (outside the proposed disturbance footprint) are soils described by the Australian Soils Atlas as loamy red earths with some yellow earths. Some lower sites have gilgaied grey clays or brown clays that are non-gilgaied. These soils are typically associated with undulating elevated plains with some steep-scarped dissected margins and occasional low mesa-like residual hills.

Geology mapping shows the following underlying geological formations in the area relevant to the proposed action:

Blackwater groupEmerald Formation (Te) are early Tertiary sediments forming a narrow plateau running north-south through the Wilton Coal Project. This formation consists of fluviatile and lacustrine claystone and siltstone, quartzose sandstone, pebbly sandstone, gravel, lignite, oil shale and interbedded basalt, which are all deeply weathered in outcrop.Ferruginous duricrust – duricrusted palaeosols (Td) overlie the Emerald Formation at the top of the ridge. These are deep weathering profiles that include ferricrete on old, duricrusted land surfaces. All occurrences of this soil type on the MLAA are outside the disturbance footprint

Vegetation community ground-truthing and mapping within the proposed disturbance area was provided in the ecological assessments undertaken by NRC (2017, Attachment 3; 2018, Attachment 4). Ground truthing of Regional Ecosystem mapping identified five vegetation communities on site:

11.5.9 - *Eucalyptus crebra* and other *Eucalyptus* spp. and *Corymbia* spp. woodland on Cainozoic sand plains and/or remnant surfaces11.7.1 - *Acacia harpophylla* and/or *Casuarina cristata* and *Eucalyptus thozetiana* or *E. microcarpa* woodland on lower scarp slopes on Cainozoic lateritic duricrust11.7.2 - *Acacia* spp. woodland on Cainozoic lateritic duricrust. Scarp retreat zone (Monospecific stands of *Acacia* spp. forest/woodland on Cainozoic lateritic duricrusts. *Acacia shirleyi* and/or *Acacia catenulata* usually predominate the woodland to low woodland to low open forest tree canopy)11.9.1 - *Acacia harpophylla-Eucalyptus cambageana* woodland to open forest on fine-grained sedimentary rocks11.9.2 - *Eucalyptus melanophloia* +/- *E. orgadophila* woodland on fine-grained sedimentary rocks

The status of these communities is discussed further in section 3.5 below.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

The site includes a plateau on the western boundary, and a wooded escarpment with a north-east aspect. This forms part of an escarpment approximately 20km in length. The escarpment feature is not named on topographic maps and is not a listed feature of the area. The area is not listed as an environmental value of the Mackenzie River sub-basin under the Environmental

Protection (Water) Policy 2009 (EHP 2011). The project site does not support an unique or outstanding habitat features, rather it is characteristic of modified habitats used for cattle grazing activities throughout the broader region.

3.5 Describe the status of native vegetation relevant to the project area.

Ground truthing of the proposed disturbance area shows the majority of the project area and surrounds is comprised of vegetation classified as least concern under the Queensland *Vegetation Management Act 1999* (REs: 11.5.9, 11.7.1, 11.7.2, 11.9.2).

RE 11.9.1 is also mapped in association with the proposed action. This community is an endangered RE under the *Vegetation Management Act 1999*, which is also listed as State-equivalent unit of the Brigalow (*Acacia harpophylla* dominant and co-dominant) Threatened Ecological Community (TEC) listed under the EPBC Act.

All areas that are mapped as supporting State-equivalent units of the Brigalow TEC were the subject of significant ground-truthing survey effort. A report was prepared to support a vegetation mapping amendment request with the Queensland Herbarium to support the outcomes of the ground-truthing assessment (NRC, 2018; see Attachment 4). The outcome of the ground-truthing assessments is that all areas supporting habitat that equates the listed Brigalow community have been avoided by design. There will be no direct impacts to this community from the proposed action. Detailed impact assessment against the *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance* is provided in Attachment 1.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The plateau on the western boundary of the MLA slopes gently to the west draining into Boggy Creek. The plateau and has a steep drop to the north east, with slopes of up to 10%. Beyond the foot slopes of the escarpment to the east and north of the site, slopes decrease to less than 1%.

3.7 Describe the current condition of the environment relevant to the project area.

Lancewood (*Acacia shirleyi*) woodland to open forest (RE 11.7.2) occurs on the upper slopes and ridges on the western side of the project area and was observed to be in good condition with little weed invasion. The steep nature of these slopes and shallow soils are such that cattle do not appear to graze significantly in these areas compared to the other habitat types present. The lower slopes and gullies support *Eucalyptus thozetiana* woodland with Brigalow (*Acacia harpophylla*) often present (RE 11.7.1). Although the understorey in larger undisturbed patches is comprised of native shrubs and grasses, there is a significant edge effect in areas adjacent to disturbed (non-remnant) grazing areas, with a dense cover of Buffel Grass (*Cenchrus ciliaris*) dominating these margins.

Most of the flat land in the northern and eastern sections has been cleared and sown with

improved pasture grass and legume species, however, the introduced Buffel Grass now forms a dense ground cover in most patches of native vegetation areas as well. Grazed pasture areas include a number of significant weed species including Parthenium (*Parthenium hysterophorus*), and only sparse regrowth of native tree species.

There was little evidence of fire impacts on the site, however, cattle grazing impacts were present throughout the site. The ephemeral watercourses that traverse these areas are generally highly eroded with little to no riparian vegetation present.

Ground truthing of the areas supporting habitat for the listed Brigalow TEC showed those areas to be heavily modified, with low cover of woody vegetation and dominated by exotic improved pasture species (e.g. Buffel Grass) and other introduced pasture species in the ground layer. In which case, these areas are not consistent with the condition thresholds identified in the Approved Conservation Advice, whereby, exotic perennial plants comprised greater than 50% of the total vegetation cover of the patch. Nonetheless, as a precautionary approach all of these areas have been avoided by design to ensure risks of significant impacts to the listed community are avoided. Further details on the condition of the various habitat types associated with the proposed action are provided in the attached technical reports.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

There are no National Heritage Places or Commonwealth Heritage places listed within a 30km buffer of the site.

3.9 Describe any Indigenous heritage values relevant to the project area.

Pursuant to the *Aboriginal Cultural Heritage Act 2003* (Qld), an Exploration Cultural Heritage Agreement was signed with representatives of the Western Kangoulu People, who are the native title claimants of the project land, to enable clearances for exploration purposes within EPC1235. In January 2019, an extensive cultural heritage survey was carried out by the Western Kangoulu People and a number of archaeologists over the whole of the disturbance footprint for the project. An in principle cultural heritage mitigation strategy has been agreed, and negotiation of a formal Cultural Heritage Management Plan under the *Aboriginal Cultural Heritage Act 2003* (Qld) has commenced. An agreement to enable mitigation strategies to be instigated and clearing activities to commence will be in place before the project commences significant ground disturbing activities.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

The proposed action overlies pastoral property Lot 2/SP254309 – Freehold (Fairhill)

3.11 Describe any existing or any proposed uses relevant to the project area.

In the broader Emerald area of the Bowen Basin region, the primary land use is generally rural with some coal mining activities. Rural land uses are predominantly cattle grazing, with irrigated and rainfed broadacre cropping.

Cattle grazing is the dominant land use within the Wilton Coal Project area. Most of the flat land in the northern and eastern sections has been cleared. Tracks, fences and yards are present across the area for cattle grazing. The eastern edge of the ridge that runs roughly north-south through the site is the steepest part of the lease and remains largely uncleared.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

FLORA AND FAUNA

Detailed terrestrial flora and fauna assessments have been conducted across the proposed development area to identify the likelihood of occurrence of listed species or communities, and relevant habitat for those matters.

The key mechanism for minimising impacts to significant environmental matters associated with the proposed action has been avoidance through detailed determination of the extent of those matters, and through modifications to the project design to ensure those matters are retained.

Surveys have been undertaken to delineate the extent of significant vegetation communities on the site so that remnant habitats of higher conservation value can be avoided by design. The proposed footprint has been reduced and designed to avoid as much remnant habitat as possible including changes to the design to avoid all impacts to the ground-truthed extent of the listed Brigalow TEC. The proposed action does involve disturbance to any unique features in the landscape that would equate to import habitat for any MNES species or communities.

To reduce and potential impacts to fauna, clearing works will commence in a sequential manner wherever possible to allow fauna to escape to natural areas away from construction works.

Impact management measures are proposed for the Squatter Pigeon, due the presence of local records of this species and the incidental observation in neighbouring habitat. Potential impacts identified for this species were indirect impacts associated with vehicle strike on roadsides and tracks in adjacent habitats (or potential incidental occurrences in non-preferred habitats in the project area. The following controls are proposed to minimise the likelihood of vehicle strike in general, with a focus on reducing the likelihood of death or injury to Squatter Pigeons within the project area and surrounds:

- Site inductions or toolbox meetings will include information about sensitive aspects of the environment in which personnel are working, including the risk of injury or death to Squatter Pigeons from vehicles.

- Due to the ground dwelling nature of the species, all vehicles will remain on existing access

tracks and roads wherever possible.

- Speed limits will be implemented as appropriate for the condition of the roads and access tracks on site. Locations of Squatter Pigeon sightings will be recorded speed limits (20km/hr recommended) will be implemented within 200m of locations where Squatter Pigeons have been regularly observed.

The mine site will undergo progressive post-extraction rehabilitation. A mine site rehabilitation strategy will be prepared detailing the locations, outcomes and timing of rehabilitation. To facilitate revegetation, soil stockpiles will be created during construction, with topsoil stockpiled separately from sub-soils and to a maximum height of 0.8 metres. This will improve the likelihood of retention of a seed bank within the topsoil, which will increase the effectiveness of its use for rehabilitation in the future.

Weed management will be implemented both during the construction, operational and rehabilitation phases of the project. The following best practice principles will be applied where practical:

* Wherever possible construction activities will work from areas with fewer weed species and smaller infestations towards areas where there is a greater abundance of weeds.

* Vehicles and machinery brought on site will be clean and free of weeds, dirt and other material that may contain weed seeds and cause exotic species to become established within the works areas.

* spread of state and locally declared weed species will be minimised by implementing control measures within the proposed works areas prior to construction.

* Regular observation of disturbance sites and stockpiles for incidence of weed species, particularly weed species declared at the state or local government level.

* Where any weed establishment is identified as a result of the proposed action, appropriate control measures will be implemented to minimise the impacts of weeds on native habitat.

Although dust levels are not anticipated to be problematic, dust suppression techniques will be applied including:

* application of water on trafficable surfaces,

* limiting activities in high wind conditions,

* application of water/binding agent to construction sites during construction.

WATER RESOURCES

Based on the information presented in the attached technical report, it is evident that impact of the Wilton Coal Project on groundwater or surface water resources is not considered a

significant impact. The key reasons for this conclusion are:

* Surface water resources around WCP are ephemeral and have variable water quality due to seasonal fluctuation of rainfall. No watercourses are proposed to be diverted or interfered with. An existing farm dam built on a drainage channel will be upgraded to store clean water.* All mine affected water will be stored in sedimentation and evaporation ponds. Ponds will be designed to a 1 in 100 year event capacity.* Management options will include reuse and recycle of potentially impacted surface water mainly for onsite dust suppression.* Prior to the onset of the wet season, water levels within sedimentation and evaporation dams will be lowered as to allow for sufficient freeboard to cater for a 1 in 100 year rainfall event.* Quality of all stored surface water at WCP will be monitored at least quarterly and a release will only occur if a water quality criterion agreed upon by DES is met.* Infiltration from above surface storages into groundwater is expected to be low due to generally low permeability of the upper weathered surface.* Groundwater aquifers at WCP generally have very low yield. High salinity of groundwater has been confirmed by site investigations and ongoing monitoring. Low yield and high salinity restrict beneficial use of groundwater in the region.* Analytical modelling suggests groundwater withdrawal during pit dewatering is expected to cause no more than 2.6 m drawdown in any existing registered bore. Maximum drawdown expected at a distance of 3 km from the pit wall reduces to 1 m.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

The outcome of the MNES significant impact assessment, with consideration to the aforementioned approaches to avoiding and reducing impacts, is that there will be no significant impacts to any matters protected under the EPBC Act as a result of the proposed action.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

No

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

FLORA AND FAUNA

The key mechanism to avoid significant impacts to MNES has been the implementation of comprehensive ground-truthing survey programs to detail the extent of significant matters and to avoid these areas by design.

Wherever possible, infrastructure associated with the proposed action has been designed within areas of existing disturbance. Substantial portions of the project area are located within highly disturbed habitats that have been modified for existing grazing land uses. These areas support very limited habitat values for listed species and communities.

The remnant habitats associated with the proposed action, whilst relatively intact in some instances, do not support any unique or limited habitat values. These remnant areas do not represent critical habitat for any listed species or communities of potential relevance to the proposed action. Habitats associated with the proposed action are unlikely to support an important population of any listed species given the absence of species records, lack of evidence of occurrence during the field surveys, and lack of suitable habitat values.

The proposed action occurs on the margin of a large unit of remnant vegetation, and as such, no remnant habitats will be isolated or fragmented as a result of the proposed disturbance.

The proposed action avoids direct disturbance to listed species and communities by design. Indirect disturbances are unlikely to be significant due to the low value of the habitat for listed species and communities. Furthermore, the proposed impact mitigation strategies identified in Section 4 are designed to minimise the potential for indirect impacts to listed species that may occur in the broader locality.

Given the lack of important habitat or populations of any listed species of communities, and through the implementation of the described impact avoidance, mitigation and management approaches, it is unlikely the proposed action will have a significant impacts on any matter protected under the EPBC Act.

WATER RESOURCES

Based on the information presented in the water resource technical report attached to this

application, it is evident that impact of the Wilton Coal Project on groundwater or surface water resources is not considered a significant impact. The key reasons for this conclusion are:

* Surface water resources around WCP are ephemeral and have variable water quality due to seasonal fluctuation of rainfall. No watercourses are proposed to be diverted or interfered with. An existing farm dam built on a drainage channel will be upgraded to store clean water.* All mine affected water will be stored in sedimentation and evaporation ponds. Ponds will be designed to a 1 in 100 year event capacity.* Management options will include reuse and recycle of potentially impacted surface water mainly for onsite dust suppression.* Prior to the onset of the wet season, water levels within sedimentation and evaporation dams will be lowered as to allow for sufficient freeboard to cater for a 1 in 100 year rainfall event.* Quality of all stored surface water at WCP will be monitored at least quarterly and a release will only occur if a water quality criterion agreed upon by DES is met.* Infiltration from above surface storages into groundwater is expected to be low due to generally low permeability of the upper weathered surface.* Groundwater aquifers at WCP generally have very low yield. High salinity of groundwater has been confirmed by site investigations and ongoing monitoring. Low yield and high salinity restrict beneficial use of groundwater in the region.* Analytical modelling suggests groundwater withdrawal during pit dewatering is expected to cause no more than 2.6 m drawdown in any existing registered bore. Maximum drawdown expected at a distance of 3 km from the pit wall reduces to 1 m.

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Futura Resources Limited have a good record of environmental management and have allocated sufficient resources and finances to under take the activity in an environmentally responsible way.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

The project proponent, Futura Resources Limited, or its directors have not been convicted of any environmental offence under any Commonwealth, State or Territory law.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

A copy of Futura Resources Limited environmental policy has been attached.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

No

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
As provided in the attached reports	High	None that are aware of.

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

Not mining at Wilton.

8.1 Select the relevant alternatives related to your proposed action.

Activities

8.9 Describe any public consultation that has been, is being or will be undertaken (including with Indigenous stakeholders).

Regular dialogue has been under taken with all directly affected land holders and adjacent land holders as is required under the Mineral Resources Act over the past four years.

See **Section 1.13**.

8.10 Describe any environmental impact assessments that have been, is being or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project for the alternative.

Whilst an option is to not proceed with the mining of the resource, an impact assessment would not be required should the 'do nothing' option have been pursued.

The project is being assessed under the Environmental Protection Act 1994 (Qld) as an Environmental Authority Application.

Due to the project being under two million tonnes per annum, the project did not trigger an EIS.

See detailed outline of the assessment to date under **Section 1.14.**

8.12 Nominate any matters of National Environmental Significance that are likely to be impacted by this alternative proposal by ticking the relevant checkboxes.

8.13 Describe any impacts on the flora and fauna relevant to the alternative proposal.

Nil should the 'do nothing' option have been pursued.

8.26 What are the proposed measures for any alternative action to avoid or reduce impact?

Nil should the 'do nothing' option have been pursued.

8.27 Do you have another alternative?

Yes

8.27.1 Describe the details of the proposed alternative proposal.

Locate mining infrastucture in areas that do not impact of MNES values as per this referral.

An assessment was undertaken during the development of the project to look at the placement of infrastucture in areas that would not required the need to clear vegetation.

The option presented in the attached technical reports with this referral represent the outcome of this assessment and shows how infrasture avoids MNES.

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Project Manager

9.2.2 First Name

Ben

9.2.3 Last Name

Dunlop

9.2.4 E-mail

ben.dunlop@futuraresources.com.au

9.2.5 Postal Address

GPO Box 225
SYDNEY NSW 2001
Australia

9.2.6 ABN/ACN

ABN

64113707458 - FUTURA RESOURCES LIMITED

9.2.7 Organisation Telephone

+61 7 3149 8225

9.2.8 Organisation E-mail

info@futuraresources.com.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date: .....

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, Benjamin Dunlop, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:..... Date: 27/03/19

I, _____, the person proposing the action, consent to the designation of _____ as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: .....

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Project Manager

9.5.2 First Name

Ben

9.5.3 Last Name

Dunlop

9.5.4 E-mail

ben.dunlop@futuraresources.com.au

9.5.5 Postal Address

GPO Box 225
SYDNEY NSW 2001
Australia

9.5.6 ABN/ACN

ABN

64113707458 - FUTURA RESOURCES LIMITED

9.5.7 Organisation Telephone

+61 7 3149 8225

9.5.8 Organisation E-mail

info@futuraresources.com.au

Proposed designated proponent - Declaration

I, Benjamin Dunlop, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:..... Date: 27/03/19

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Principal Environmental Scientist

9.8.2 First Name

Damien

9.8.3 Last Name

Taylor

9.8.4 E-mail

djtaylor@slrconsulting.com

9.8.5 Postal Address

PO Box 26
SPRINGHILL QLD 4004
Australia

9.8.6 ABN/ACN

ABN

91662484530 - SLR CONSULTING AUSTRALIA PTY LTD

9.8.7 Organisation Telephone

+61 7 3858 4800

9.8.8 Organisation E-mail

brisbane@slrconsulting.com

Referring Party - Declaration

I, Damien TAYLOR, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:..... Date: 27/03/2019

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. 623.17170-R01-v1.1_GW Report_Part1.pdf
2. 623.17170-R01-v1.1_GW Report_Part2_Appendix A.pdf
3. 623.17170_EPBC Referral_Attachment 1_NRC 2019.pdf
4. 20190301_Wilton_EPBCReferral_MNES_v2.pdf
5. Futura Environmental Policy_Mar2019.pdf
6. GroundTruthedBrigalowArea_NRC_20190304.zip
7. Wilton_ProposedSiteDisturbance_20190304.zip