Title of Proposal - RMA 2: Stages one to two proposed clay borrow pits, general fill and hard rock extraction pits, and

Section 1 - Summary of your proposed action

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

1.1 Project Industry Type

Waste Management (non-sewerage)

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

The proposed action will occur on Lot 7 SP228453 which is otherwise known as Residue Management Area 2' (or RMA 2) and the 'project area'. Lot 7 is approximately 898 ha in size.

The proposed action will be divided into three stages:
• Stages one and two will involve clearing for establishing nine clay material borrow, general fill and hard rock extraction pits (note – the pits are numbered one through to ten, however Pit 9 has been referred previously as its own referral). The pits will have associated haul routes and stockpile areas, water diversions and erosion and sediment controls.
o Stage one will involve the creation of borrow Pits numbered 2 and 10 (and associated routes, diversions etc.).
o Stage two will involve the creation of the remaining seven pits (and their associated routes, diversions etc.).
o Stage three will involve the creation of a new red mud dam, which will encompass the majority of Lot 7 – the red mud dam will be created initially at a size to be determined at a later date. As the walls are raised to increase capacity, works will expand to further to the edges of Lot 7 to allow for the batters for the dam.

The action for Stages one to two will also involve the operation the pits, haul roads and stockpiles within RMA 2 for the extraction of clay, general fill and hard rock material. The material from the proposed pits will be used for RMA 1 (which is to the east of the proposed borrow pit within RMA 2) to increase the existing dam walls.
Stage 3 will involve the operation of the new red mud dam (and will likely include construction of stockpile areas, laydowns, tracks and haul routes, erosion controls and water diversions).

To provide context for the proposed action, RMA 2 is zoned a Waste Management Precinct. The extracted clay, rock and general fill material from the proposed borrow pits will be used to service RMA 1 (RMA 1 is located to the east of RMA 2). The existing RMA 1 is a disposal area for red mud (a by-product of refining alumina via the Bayer process). During the Bayer process, undissolved solids from the bauxite are separated and settle to form a fine red mud. This red mud is neutralised with sea water and pumped to the RMA 1 for storage. The existing land use of RMA 1 is a disposal facility for aluminium refinery waste products. The 'red mud' is produced at the refinery when bauxite is refined to generate alumina and subsequently

transported and pumped to RMA 1 for disposal. Following extraction of material from the borrow pit, and prior to RMA 1 existing red mud dam reaching capacity, RMA 2 will be created into a red mud dam (Stage three). Designs have not been commenced for the new red mud dam, as the dam is expected to be constructed in approximately 10 years time. It is possible that the majority of the RMA 2 will be constructed into a new red mud dam (and will likely include construction of stockpile areas, laydowns, tracks and haul routes, erosion controls and water diversions).

The expansion of the RMA 1 dam wall using clay materials extracted from RMA 2 (subject of this proposal) will increase the capacity of RMA 1 and allow for the disposal of red mud waste product which will in turn allow for continued operations at the refinery (RTAY 2017). RTAY is currently conditioned to extract a maximum of 150,000 m3 per year of materials. Due to changes in dam construction, RTAY will have an increased demand for clay and general fill resources during 2018 and 2019 with a predicted peak demand of up to 600,000 m3 in 2018. To allow the refinery operation and residue generation to continue, the dam wall at RMA 1 will be expanded until the final authorised height is met. Sand, general fill and clay material will be used for the dam works. Due to high importation costs and limited supply options, RTAY propose to extract clay for this purpose from RMA 2 (located adjacent to RMA 1) (RTAY 2017).

RTAY is undertaking an application to amend the State Development Area (SDA) to allow for an increase in the volume of material to be extracted to 600,000 m3 per year and add an additional nine extraction pits. RMA 2 will eventually be developed as a residue disposal facility when RMA 1 reaches its capacity.

Geotechnical investigations have been conducted for RTAY within the project area to assess the most suitable location for the extraction of the clay and rock resource, with the locations (proposed in this application) nominated as a result of the investigations (RTAY 2017).
A staged approach will be applied to the construction of the pits (and associated haul roads etc.) over a 10 year period. Table 1 below provides the pit location names and their approximate size (size of pit only).

Table 1 Approximate areas of pits

Location / Pit number	Area (Ha)
1	8.36
2	15.51
3	5.78
4	46.42
5	7.95
6	5.46
7	5.57
8	16.32
9*	13.39
10	2.66
Total	127.47**
(or 114.03 excluding pit 9)	

*PRA9 has already been subject of a referral to DoEE and is not included in this application
**Note, the pit sizes are approximate and the clearing area does not include the stockpile locations, haul roads, laydowns, erosion and sediment control and water diversion devices etc

as these have not yet been designed. It is possible that the stockpiles, haul roads and sediment structures will increase total disturbance up to 180 – 200 ha (final footprint to be determined).

It is currently proposed that the borrow areas are constructed in the following order (for the next 5 years):
• 10 (2018)
• 2 (2018)
• 5 (2019)
• 6 (2020)
• 7 (2021).

Only five areas will be developed initially in order to reduce the footprint, avoid excessive topsoil stockpiling as well as minimizing required erosion/sedimentation control measures. It is envisaged by RTAY that the remaining pits will be constructed after 2023.

Stage one will commence in early 2018 (comprising of two pits). The seven remaining pits (Stage 2) will be constructed sequentially by 2025. Construction of the new red mud dam (Stage three) could potentially commence around 2025 (approximately).
Works are tentatively planned to commence for pits 10 and 2 in April 2018 (including haul roads and stockpile areas) providing all approvals are in place. Clearing for the borrow pits is estimated to take one to two weeks, with installation of haul routes, diversions etc to occur over an approximate two month time frame. Operation of the pits (i.e. removal of clay, fill and rock material) is expected to occur throughout the year until the material quota is reached (preliminary estimates are extraction of each pit could take up to one year), based on the current scope/design for 2018/2019.
Each of the remaining pits are expected to take approximately one to two months to construct per pit (each pit will take approximately one to two weeks, however associated diversions etc., could take up to two months). The pits will generally operate for one year each (depending on resource demand and the pit size). Pit use will depend on demand for material. Some of the future pits (after 2018/2019) may have periods of dormancy when there is no need for clay (discussion with RTAY).
Access and haulage of clay, fill and rock material between RMA 1 and the proposed pits will be via internal routes. Detailed designs are not yet available. Section 1.4 provide maps showing the indicative locations of the haul routes.

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
Lot 7 SP228453	1	-23.858524790139	151.06345164173
Lot 7 SP228453	2	-23.886701859253	151.07349383228
Lot 7 SP228453	3	-23.901376621301	151.03941904896
Lot 7 SP228453	4	-23.876734627761	151.02405535572

Area	Point	Latitude	Longitude
Lot 7 SP228453	5	-23.866138697542	151.03787409656
Lot 7 SP228453	6	-23.858603286313	151.06327998035
Lot 7 SP228453	7	-23.858524790139	151.06345164173

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).

Lot 7 SP228453 (known as the project area) is located along Aldoga Road in Aldoga Queensland, approximately 15 km from the city of Gladstone, Queensland. The project area is approximately 898 ha. The property is privately owned by Rio Tinto. The area subject to the proposed action is located in the various locations within Lot 7 SP228453 (and to the east of the existing RTAY Residue Disposal Area). Stage three is likely to cover the majority of the site.

Currently, an existing clay borrow pit (Pit 9) and haul roads are in use on Lot 7. The remainder of the allotment has no activities currently being undertaken. The unused area is comprised of non-remnant vegetation, remnant eucalypt woodlands and cleared areas.

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

Stage one: 18.17ha (pit area only) stage 2: 114.03ha (pits only including stage 1) 180-200ha footprint with roads/stockpiles

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Lot 7 SP228453

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 04/2018

End date 12/2062

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

This section refers to the creation and operation of the nine pits (and not the new red mud dam). The construction of the new red mud dam will be subject to additional approvals (and associated requirements such as notification periods etc.) which will be undertaken closer to the anticipated construction of the new red mud dam when more details are known.

RTAY is undertaking an application to amend the SDA to allow for an increase in the volume of material to be extracted to 600,000 m3 per year and add an additional nine extraction pits. RMA 2 will eventually be developed as a residue disposal facility when RMA 1 reaches its capacity. The proposed change to the SDA Approval is assessable under the waste management precinct of the Gladstone State Development Area Development Scheme (RTAY 2017).

An Environmental Authority (EA) is applicable to the RMA 1 and 2 site (EPPR00926513) where the clay material from the borrow pit in RMA 2 will be used and authorises RTAY to undertake the environmentally relevant activities (ERAs) described below (as per RTAY, 2017). Table 3 below provides an outline of ERA's.

Table 3 Outline of ERA's

Environmentally Relevant Activities

Thresholds

Description of Activity

ERA 16 Extractive and Screening Activities

Threshold 2 (d) – extracting, other than by dredging, in a year, more than 1000000 t of material.

Allows RTAY to extract rock and fill material for RMA dam construction.

ERA 16 Extractive and Screening Activities

Threshold 3 (c) – screening, in a year, more than 1000000 t of material.

Allows RTAY to screen rock and fill material for RMA dam construction.

ERA 50 Bulk material handling

Threshold 2 – loading or unloading 100 t or more of bulk materials in a day or stockpiling bulk materials.

Sand and other fill material may be stockpiled at the RMA during construction works.

ERA 60 Waste Disposal

Threshold 1(d) – operating a facility for disposing of, in a year, more than 200000 t of regulated water or regulated waste and any, or any combination of general waste; limited regulated waste or if the facility is in a scheduled area – no more than 5t of clinical waste.

Waste from refining process will be permanently stored in RMA 1 and RMA 2 dam.

ERA 8 Chemical Storage

Threshold 5 – storing 200 t or more of chemicals that are solids or gases, other than chemicals mentioned in items 1 to 3 under subsection (1)(d).

Diesel (55,000 L) is stored in tanks at the RMA. Up to 100,000 L may be required during the construction project.

Pre-lodgement consultation advice received by RTAY from Natural Resources and Mines (NRM) for the current approval (APC2016/004) indicates that the proposed clearing of ‘of

concern' remnant vegetation RE 11.3.4 in association with the application to change the SDA Approval is considered to meet the criteria for exemption, and therefore an SDA application for operational works for clearing native vegetation will not be required. The extraction of clay to construct a dam wall was considered to meet the definition of an urban purpose within an urban area. As all activities will occur within the same Lots for the same intent as the current approval, this exemption will remain relevant for any additional clearing of 'of concern' as a result of the proposed change (RTAY, 2017).

Other approvals will be gained where required.

The new red mud dam will be subject to a separate or updated approval.

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

As part of the previous material change of use (MCU) application for waste management in a SDA, the proposed development was required to be advertised in both the local paper and out the front of the development area (refer to Attachment E for copies of notification). Public notification may not be required for the change to the approval at this stage (pending advice from Department of State Development) for the proposed location of the borrow pit etc which is subject of this referral, however this will be finalised once the change to the material change of use progresses (RTAY, 2017). If required, notification will be undertaken. Stage three will likely be subject to its own notification requirements.

RTAY has a Cultural Heritage Management Plan (CHMP) in place with Port Curtis Coral Coast (PCCC) Claim Group. The CHMP applies to the operation of the Yarwun Alumina Refinery including the wharf, jetty, conveyor, caustic bladders, overland conveyor, unloading station and residual management areas.

Cultural heritage surveys have been completed and agreed management measures have been implemented as a result of the surveys. The CHMP sets out that Yarwun Alumina Refinery may undertake activates in the surveyed areas in accordance with the agreed management measures. Any other activities may not be undertaken unless a Cultural Heritage Site Disturbance Permit has been agreed to with the PCCC in accordance with the Cultural Heritage Management System (CHMS).

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.

N/A. Change to the existing approved MCU is currently underway. Flora and fauna surveys

have been undertaken in 2015 and 2017. Stage three will be subject to a separate application (or change to application) which will be conducted closer to planned construction for the new red mud dam.

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

Yes

1.15.1 Provide information about the larger action and details of any interdependency between the stages/components and the larger action.

RMA 2 is required to service the existing (and operational) RMA 1 for the expansion of the dam walls (existing environmental permit EPPR00926513). No ancillary facilities will be required to be built for the proposed pits as a result of the borrow pit development (stockpile areas, haul routes, water devices and sediment and erosion control will be required, however designs are not currently available). The pits will eventually form part of the area for the Stage three new red mud dam.

A staged approach will be applied to the construction of the pits (and associated haul roads etc) over a 10 year period. Table 4 below provides the pit location names and their approximate size (size of pit only). The new red mud dam is included in the Table, however the size of Lot 7 has been included. It is not known how large the new red mud dam will be.

Table 4 Approximate areas of pits

Location

Area (Ha)

Stages

Year

1

8.36

2

2022 - 2025

2

15.51

1

2018

3

5.78

2

2022 - 2025

4

46.42

2

2022 - 2025

5

7.95

2

2019

6

5.46

2

2020

7

5.57

2

2021

8

16.32

	2	
	2022 - 2025	
10		
	2.66	
	1	
	2018	
Total		
	114.03*	
Red mud dam		
Size of lot 894 (includes pits proposed as part of this referral and previous referral for Pit 9)**		
	3	
	>2025	

*Note, the pit sizes are approximate and the clearing area does not include the stockpile locations, haul roads, laydowns, erosion and sediment control and water diversion devices etc as these have not yet been designed. It is possible that the stockpiles, haul roads and sediment structures will increase disturbance to up to 180 – 200 ha (final footprint to be determined).

** The new red mud dam is not expected to cover the whole lot, however will likely take up the majority of the Lot.

Only five areas will be developed initially to reduce the footprint, avoid excessive topsoil stockpiling as well as minimize required erosion/sedimentation control measures. It is envisaged that the remaining pits will be constructed after 2025.

The construction of the new red mud dam (and likely construction of stockpile areas, laydowns, tracks and haul routes, erosion controls and water diversions) will form Stage three.

Stage one will commence in early 2018 (comprising of two pits). The seven remaining pits (Stage two) will be constructed sequentially by 2025. Stage three comprises the new red mud dam. Construction of the new red mud dam is expected to take approximately one month (or land clearing, establishment of laydowns etc). The new red mud dam will be built in phases. The initial phase will involve the construction of the red mud dam and laydowns. The dam walls are then expected to undergo a series of raises. Each raise of the wall will require batters which will encroach towards the boundaries of the allotment (i.e. gradually expanding in size until the full size is reached).

Works are tentatively planned to commence for Pits 10 and 2 in April 2018 (including haul roads and stockpile areas) providing all approvals are in place. Clearing for the borrow pits is estimated to take one to two weeks, with installation of haul routes, diversions etc to occur over an approximate two month time frame. Operation (i.e. removal of clay, fill and rock material) is expected to occur throughout the year until the material quota is reached (preliminary estimates are extraction of each pit could take up to one year) based on the current scope/design for 2018/2019.

Each of the remaining pits are expected to take approximately one to two months to construct per pit (each pit will take approximately one to two weeks, however associated diversions etc could take up to two months), and generally operating for one year each (depending on resource demand and the pit size). Put use will depend on demand for material. Some of the future pits (after 2018/2019) may have periods when there is no need for material and will remain inactive for short periods of time.

DoEE indicated that they would like the whole application referred, with all the proposed pits and new red mud dam included in the application, rather than numerous applications being applied for over time. General details on sizes of footprints could be provided at a later date if they are not yet known. Given the relatively small footprint of Stage one (approximately 18.17 ha – excluding stockpiles and diversions etc) it is thought that Stage one is not likely to be a controlled action.

Given the timeframe for construction of Stage one, we request approval for a staged project, which would enable final details for the Stage three new red mud dam to be determined at a later stage. This would also be requested to apply if offsets are required.

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

Yes

1.16.1 Identify the nature/scope and location of the related action (Including under the relevant legislation).

RMA 2 is required to build capacity of the existing red mud dam in RMA1. Refer to Section 1.12 for a summary of the approvals for RMA 1 and RMA 2.

RMA 2 is planned to eventually be developed into a new red mud dam.

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
Description: Koala (Phascolarctos cinereus)	Stages one and two will result in the removal of

Species	Impact
Brief description of the matter Habitat requirements: the diet for the koala is restricted mainly to foliage of Eucalyptus spp. but koalas may also eat leaves of Corymbia, Angophora, Lophostemon, Leptospermum and Melaleuca. Preferences for particular food tree species vary between individual koalas and also between regions and seasons (DoEE 2016). Female koalas can produce up to one offspring each year, with births occurring between October and May. Young stay in the pouch for six to eight months and then ride on the mother's back, remaining dependent until around 12 months old (DoEE 2016). Juvenile koala disperse from their natal home range prior to or early in the breeding season, moving up to 10 km away. Koalas live for approximately 15 years (females) or 12 years (males) in the wild and have a generation length of around six to eight years (DoEE 2016). Home range size is highly variable depending on the quality of habitat, with those in poorer quality habitats being larger than in higher quality habitats (DoEE 2016). Status, extent and condition of the matter within the affected area and also more broadly in the region • EPBC Act status: vulnerable • Observation details: one koala was observed in August 2015 during Ecosure dry season fauna surveys (Ecosure 2016) (along the western boundary). A koala presence/absence survey (undertaken using a modified rapid spot assessment technique) was conducted by Ecosure in 2016 (refer to Attachment B for a copy of the report). No koalas were observed during the three-day survey, however koala faecal pellets were collected and confirmed from five sites across the project area. Approximately 898 hectares of the project area (i.e. Lot 7) was surveyed and results show that primary food species Eucalyptus tereticornis, Eucalyptus crebra, Eucalyptus moluccana and Eucalyptus exserta were present along with a secondary food species, Corymbia citriodora. Eucalyptus crebra was the most common species growing in this area in contrast to a relatively low incidence of	potential koala habitat (approximately 200 ha). The remainder of the 898 ha (approximately 698 ha) will be available to the koala until Stage 3 (likely after 2025). Stage 3 will result in the removal of the majority of vegetation. During Stages one and two, intermittent blasting activities are possible as part of the operation of the pits which could potentially disrupt the koala. When blasting is required, blasting activities will occur intermittently and infrequently and therefore are not likely to have a significant impact on the koala. Within Lot 7, a habitat score of 6 was calculated for the project area (utilising the Environment Protection and Biodiversity Conservation Act Referral Guidelines for the Vulnerable Koala (2014) Koala Habitat tool) (Ecosure 2016). The previous referral for Pit 9 calculated koala habitat within the 39.87 ha clearing area at approximately 31.7 ha (for the borrow pit, haul routes and stockpile areas). This figure was calculated from aerial analysis and by excluding larger grassed areas which did not appear to have any potential koala food trees, or contained minimal trees. Some sections of the haul road if the batters are steeper than 1:2 could prevent the koala from moving into the potential habitat between the haul roads. A similar mapping exercise was undertaken for the remainder of the pits, and the new red mud dam. The Table below provides a summary. Stage 1 Pit number Notes Koala habitat Non koala habitat 2 N/A 7.73 7.79 10 N/A 2.66 Stage 2 1 N/A 2.90 Previously referred in Pit 9 1.87 N/A 1.45 Previously referred in Pit 9 2.15 3 N/A 1.93 3.85 4 N/A 46.42 5 N/A 2.85 Previously referred in Pit 9 0.03 N/A 4.66 Previously referred in Pit 9 0.41 6 N/A 5.46 7 N/A 5.58 8 N/A 16.32 9 Previously referred Pit 9 (outside overlap) 1.30 12.10 Stage 3 New red mud dam Area outside pit and previously referred area 22.42 Previously referred in Pit 9 1.68 SEVT 2.48 Area outside pit and previously referred area 726.01 Previously referred in Pit 9 17.15 Total (including pit 9) 852.03 45.19 Pit 9 (previously referred) 31.81 4.89 Total without

Species	Impact
E. tereticornis. The methods used to survey for koala within the project area were: ? koala presence/absence survey was undertaken by Ecosure between 30 March 2016 – 1 April 2016 utilising a modified Rapid Spot Assessment (RSAT) Protocol to determine presence/absence ? nocturnal surveys (32 hours survey effort). The findings from the survey confirm the presence of the koala within the project area but it was not possible to assess the population size and if the project area supports resident aggregations and/or transient populations based on the measures of activity (Ecosure 2016). The Table below provides an overview of where scats and the koala was observed in relation to each proposed pit. Location / Pit number Koala signs observed 1 No scats 2 No scats 3 No scats 4 No scats 5 No scats 6 No scats 7 Scat just outside of proposed pit 8 No scats 10 Scat just outside of proposed pit Note – some pits did not have a SAT site within them. Section 3.1.1 has a copy of the koala presence/absence report. An estimated score of 6 for the koala habitat was given to the project area (utilising the Environment Protection and Biodiversity Conservation Act Referral Guidelines for the Vulnerable Koala (2014) Koala Habitat tool) (Ecosure 2016). This corresponds to a determination that the project area contains habitat critical to the survival of the koala. Map 2 in Section 1.4 shows the location where the koala was observed. Refer to Appendix B (Koala Presence/Absence Survey) for the locations of scats and the survey locations of the rapid SAT. The koala presence/absence survey report in Section 3.1.1 also has maps of observations. Aerial and state regional ecosystem mapping reviews shows that suitable habitat within the local area is prevalent (refer to impacts section). Physical barriers and threats to the koala would likely include roads/vehicle strikes, loss of habitat (i.e. clearing of potential feed trees and fragmentation) and wild dogs. Key threats and threatening processes and beneficial actions	Pit 9 820.22 40.30 *Note – Pits 1 and 5 overlap with the previously referred area for Pit 9. The overlap area has been excluded from the habitat calculations. An assessment of the vulnerable species impact criteria was also undertaken: • will the action lead to a long-term decrease in the size of an important population of a species - a modified SAT survey was undertaken, with five locations recorded with koala scats (one koala was seen in previous site surveys, however not in the SAT survey). The modified SAT survey does not allow the population abundance to be determined, or qualify whether the population was likely to be transient or a resident population. Discussions with DoEE determined that a full SAT survey would not be required, as the assessment as to whether there would be a significant impact was undertaken on koala habitat to be removed (based on the koala sightings and habitat present). Should koala population estimates be required, a full SAT can be conducted. - Stages one and two will retain koala habitat within the allotment. The Stage one pits (2 and 10) will utilise approximately 18.17 ha of land, and result in the removal of approximately 10.44 ha of potential koala habitat (note – this does not include the stockpile areas etc). - Stage two will result in a total of approximately 200 ha of vegetation being removed (i.e. the combined footprint of Stages one and two) - this estimate includes an approximate total footprint (including the stockpiles, haul roads, diversions etc) – given the known footprint for Stage 2 (114.03 ha), 94.16 ha is estimated potential koala habitat (however this is approximate and excludes stockpiles etc). - Stage three will result in the majority of vegetation likely to be removed from Lot 7 with the creation of the new red mud dam (the entire Lot 7 is approximately 897.96 ha, and the estimated koala habitat is approximately 820 ha excluding the SEVT and the previously referred Pit 9). • will the action reduce the area of occupancy of an important population - The footprint of Stage one is relatively small and will allow koalas to still

Species	Impact
and processes The main identified threats to this species are loss and fragmentation of habitat, vehicle strike, disease, and predation by dogs (TSSC 2012).	utilise habitat within the Lot and move through the landscape. Stage two will further reduce the amount of habitat, but similarly will still allow vegetation on-site to be used as well as allowing koalas to move through the landscape. The following mitigation measures will be in place for Stages one and two: o speed limits and signage will be provided along the haul routes to reduce the risk of koala strikes, and all personnel will be made aware of koala's in the area, monitoring will be undertaken of any sightings or near misses etc. o rope ladders will be installed in areas with steep batters along the haul road at 50 m intervals to allow the koala to exit the haul road. - Stage three will result in the removal of the majority of vegetation on-site. Stage three will retain these measures where haul roads go through retained habitat. The flowchart for assessing adverse effects on habitat critical to the survival of the koala (DoE 2014) suggests that the points provided below are considered as these characteristics (in combination with each other), will determine whether the action is likely to adversely affect habitat critical to the survival of the koala: • The score calculated for the impact area (higher score = greater risk of significant impact) - a score of 6 was calculated for the majority of the project area (Ecosure 2016). • Amount of koala habitat being cleared (more habitat cleared = greater risk of significant impact) - The clearing will be staged: o Stage one: approximately 18.17 ha (10.44 ha koala habitat) o Stage two: approximately an additional 101.18 ha (89.04 ha koala habitat) o Stage three: The pits and majority of land within Lot 7 will be created into a new red mud dam - note, this is an approximate estimate only as no detailed designs have yet been developed. • Method of clearing (i.e. clear-felling has greater risk of significant impact than selective felling with understorey and koala food tree retention) - the borrow pits, haul roads, stockpile areas, erosion controls, water diversions etc will be entirely cleared. Vegetation surrounding the pits (approximately 600 ha) will remain within the

Species	Impact
	allotment allowing the koala to utilise the habitat on site until the majority of vegetation on-site will be removed for Stage three new red mud dam. Some vegetation is likely to remain around the fringes of the allotment in Stage three. Clearing will be undertaken in the presence of fauna spotter catchers and koala spotters and will be conducted in accordance with state requirements and best practice. • The density or abundance of koalas (relatively high density or abundance for the region means greater risk of significant impact) - koala presence was confirmed at the site using a rapid SAT. The findings confirmed the presence of koalas within the project area but it is not possible to assess the population size. Therefore it cannot be estimated whether the project area supports resident aggregations and/or transient populations based on the method. Discussions with DoEE determined that a full SAT survey would not be required, as the assessment as to whether there would be a significant impact was based on koala habitat to be removed (based on the koala sightings and habitat present). Should koala population estimates be required, a full SAT can be conducted. • Level of fragmentation caused by the clearing (greater degree of fragmentation has greater risk of significant impact) - During Stages one and two koalas will be able to move through the landscape on the project area, however Stage three will remove much of the vegetation, with only the fringes likely to contain any vegetation. The fringing vegetation will be available for koala use. - The haul roads will traverse potential koala habitat. When considering if there are adverse effects to the survival of the koala, the potential for the action to interfere substantially with the recovery of the koala also needs to be considered such as: • Dog attacks - controls can be put in place to ban workers bringing dogs to work (if not already in place) • Increasing vehicle strikes - the haul roads will traverse koala habitat. There is potential for increased vehicle strikes if koalas cross these areas. Measures can be put

Species	Impact
	in place such as raising awareness (site inductions/tool box talks), signage and reduced speed limits to assist to mitigate the risk of vehicle related koala strikes. • Facilitating the introduction or spread of disease or pathogens - The proposed action will not facilitate the introduction or spread of disease or pathogens: • no koalas will be introduced that could introduce Chlamydia. • if any plant material is used (e.g. for revegetation if required), these will be required to be declared weed and pathogen free • Creating a barrier to movement to, between or within habitat critical to the survival of the koala that is likely to result in a long-term reduction in genetic fitness or access to habitat critical to the survival of the koala - During Stages one and two koalas will be able to move through the landscape on the project area. - The haul roads also traverse potential koala habitat, however mechanisms can be put in place if batters are too steep. • Changing hydrology which degrades habitat critical to the survival of the koala to the extent that the carrying capacity of the habitat is reduced in the long-term - the landscape within the project area is undulating. Groundwater bores will be installed and monitored (refer to Section 3.2 for more information). Timing and duration of the likely impact Stage one is expected to occur in April 2018. The remaining pits (Stage two) are expected to be constructed sequentially to 2025. The new red mud dam is expected to commence construction around 2025. Stage one will remove a relatively small amount of vegetation. Stage two will remove up to approximately 200 ha of vegetation (including the stage one area). Operation of the pits are not anticipated to have a direct on-going impact to the koala. Blasting activities are unlikely, and if required would be extremely infrequent. Construction of the haul roads (if unmanaged) could pose some mobility issues for koalas in areas where there are steep batters. Providing the 1:2 batters are grassed, koalas will likely be able to traverse across the haul roads. Batters steeper than 1:2 (i.e. 1:1 batters) may pose an

Species	Impact
	issue for koalas traversing to habitat between the haul roads (with some sections potentially comprising of exposed rock). Given the low speeds travelled by vehicles during the day, it is expected that risk of koala strike would be low. The aim will be to minimise the time koalas are on the haul road to further reduce koala strike and to allow koala's access to other potential habitat between the haul roads. In the circumstance that a koala enters onto the haul road, controls will be in place to reduce the likelihood of vehicle strikes such as: • education in the induction process regarding koalas in the area • awareness during tool box talks • speed restrictions to 30 km/h for heavy vehicles (e.g. dump trucks) and 40 km/h for light vehicles, with speed and monitoring trackers installed on the heavy vehicles • signage. A key measure for reducing time spent on the haul roads in areas where steep batters are located will be the installation (and maintenance) of rope bridges. These will be installed as a precaution to assist any koala exit the haul road if they cannot easily climb the batter. Alternatively, poles (or reused cleared tree trunks) could be used instead of rope bridges. The escapes are to be installed at maximum 50 m intervals in areas with steep (1:1) batters. If the koala crosses onto the haul road and cannot traverse a steep batter, the escapes will allow the koala to grip and climb up the batter – the rope ladder system is expected to work in a similar way to underpasses and fencing systems, with the steep batter acting as a 'fence' to guide the koala to a rope ladder nearby to escape off the haul road. To further ensure the koala exits the haul road as quickly as possible, the positioning of the escapes should enter/exit treed areas (with favoured koala feed trees as close as possible to the escapes, whist complying with vegetation restrictions of tree proximity to the haul road). This will assist the koala to quickly traverse the haul road as it will sense the nearby trees. Stage three will result in the removal of the majority of vegetation on-site, however it is expected that fringing vegetation

Species	Impact
	would be retained which the will still be available for koalas to utilise. Stage three will utilise the above measures where applicable. Extent of the impact The construction and operation of the pits will result in the permanent localised removal of potential koala feed trees. Access to potential habitat between the haul roads will be assisted through the installation and maintenance of escapes between the haul roads. Stage three will result in the removal of the majority of vegetation on-site. To mitigate any potential risk to the koala during construction, suitably qualified koala fauna spotter catchers must conduct a pre-clearance survey for koalas and must be present on site during the clearing to specifically spot for koalas. If any koalas are observed, a no go area will be established around the koala and the tree and the koala will be left to disperse on its own accord. The koala will be monitored until it is out of the works zone. All machinery shall be declared weed free prior to mobilising to site to reduce the introduction or spread of weeds. Speed restrictions along the haul route will be implemented as well as signage. Koala information (e.g. presence in the area, speed restrictions, reporting any sightings, not touching the koala etc.) will form part of the induction package for the refinery and borrow pits. If haul roads traverse any retained habitat for Stage three, these restrictions will still apply. If any blasting is to occur, fauna spotter catchers will assess the borrow pit area and surrounds to ensure there are no koalas (or other species) impacted by blasting. Blasting is not likely, and if required would be infrequent. Likely consequence of the impact on the Protected Matter(s), including both adverse and beneficial impacts and any related social and economic impacts Direct removal of vegetation (and potential koala feed trees) will occur as a result of the proposed action. Haul roads will act as a potential barrier to koala movement given the steepness of the batters. It is possible to construct a more gentle grade to the haul roads, however this would result in an increase

Species	Impact
	of potential food tree removal, which also provides habitat for other fauna species. Benefits to the koala will include the ongoing Pest Management Program, which aims to koala predators from the site. During 2015, the baiting program resulted in the death of a single wild dog adjacent to the baiting station (Ecosure 2015). Feral dog densities will continue to be monitored by RTAY staff, particularly following rainfall events to monitor changes in population densities and control as required. The giant rats tail grass eradication program will continue. Economic impacts will stay positive with the continued operation of the RMA 1 site. Stage three (new red mud dam) will allow the refinery to continue. Likelihood of the impact affecting the Protected Matter(s) Stage one will remove a relatively small amount of potential koala habitat (note – this has been given a score of 6 – critical habitat) and is unlikely to have a significant impact due to the small amount of habitat to be removed and likely low impact on koala. Stage two will remove approximately 200 ha (including Stage one). Koalas will still be able to utilise the site for browse and move through the site during Stages one and two, however could potentially result in a significant impact. Stage three will likely have a significant impact due to the amount of vegetation being removed. The koala will only be able to use the limited fringing vegetation. Measures available to prevent and avoid, or mitigate and repair the consequences of, the impact For Stages one and two measures will be put in place to: • reduce koala strikes: in the unlikely circumstances that koalas access the haul roads, measures will be in place to reduce the risk of koala vehicle strikes including escapes (such as ropes or poles) in areas where steep batters are present. This will be undertaken through speed limit restrictions (30 km/hour for truck s and 40 km/hour for light vehicles), environmental awareness in inductions and toolbox talks and signage. These measures will remain in the case where haul roads go through any retained koala habitat for Stage three. If

Species	Impact
	offsets are required, they will provide mitigation to the removal of habitat (refer to Section 4). Nature and extent of likely impact Stage one will remove a relatively small amount of potential koala habitat (note – this has been given a score of 6 – critical habitat). Stage two will remove approximately 200 ha (cumulative total including Stage one). The koala will be able to move through the landscape and access feed trees around the pits and across the haul roads to potential habitat between the haul roads for Stages one and two. Stage three will likely result in the majority of vegetation being removed and unavailable for the koala. The koala will only be able to use the limited fringing vegetation.
Description: greater glider (Petauroides volans) Brief description of the matter Habitat requirements: this species is folivorous. Its diet is generally restricted to eucalypt leaves and flowers. This species occurs in abundance in tall montane, moist eucalypt forests with relatively old trees with a high number of hollows for sheltering. Home ranges generally are relatively small (between 1 – 4 ha), however in lower quality habitat and more open woodlands their home range tends to be larger. Females give birth to a single young from March to June (TSSC, 2016). Status, extent and condition of the matter within the affected area and also more broadly in the region • EPBC Act status: vulnerable • Observation details: no greater gliders were observed during the surveys. DoEE identified that the greater glider may occur at the site. The greater glider became listed after the original fauna survey in 2015. Targeted searches for the greater glider were not undertaken in 2015 or 2016. They were not found in the general surveys. General fauna surveys were conducted including: • nocturnal surveys and spotlighting (32 hours of nocturnal survey effort was done for the koala, with no greater glider sightings recorded) The surveys revealed that over half the site is mapped as non-remnant vegetation with a low abundance of hollows, and would be unlikely to	Stages one to three will result in the removal of vegetation. Whilst surveys did not target the greater glider, it is thought that the vegetation to be removed does not provide important habitat for this species due to the lack of large tracts of hollow bearing vegetation. Timing and duration of the likely impact Stage one is expected to occur in April 2018. The remaining pits (Stage two) are expected to be constructed sequentially to 2028. The new red mud dam is expected to commence construction around 2028. Extent of the impact The construction and operation of the pits will result in the permanent localised removal of vegetation. Stage three will result in the removal of the majority of vegetation on-site. Likely consequence of the impact on the Protected Matter(s), including both adverse and beneficial impacts and any related social and economic impacts Stages one to three will result in the removal of vegetation. Whilst surveys did not target the greater glider, it is thought that the vegetation to be removed does not provide important habitat for this species due to the lack of large tracts of hollow bearing vegetation. Likelihood of the impact affecting the Protected Matter(s) Stages one to three will result in the removal of vegetation. Whilst surveys did not target the greater glider, it is thought that the vegetation to be removed does not provide important habitat

Species	Impact
provide suitable hollow bearing habitat the greater glider requires. Patches of vegetation within the remnant vegetation (particularly around the drainage features) contained a higher abundance of hollows, however is not considered likely to support a significant population. RTAY has reported that the greater glider has not been observed in other studies, nor from any fauna spotter catcher reports during construction works. Key threats and threatening processes and beneficial actions and processes The main identified threats to this species are loss of habitat through clearing, burning and fragmentation. Other threats include climate change, entanglement in barbed wire fencing, owl predation, competition with sulphur-crested cockatoos and Phytophthora root fungus (TSSC 2016).	for this species due to the lack of large tracts of hollow bearing vegetation, therefore it is considered unlikely that the impact will affect the greater glider. Measures available to prevent and avoid, or mitigate and repair the consequences of, the impact The relatively small clearing associated with Stage one occurs within approximately 2.66 ha of remnant vegetation, the remainder of Stage one occurs in non-remnant vegetation. Sufficient potential habitat will remain. In the unlikely event that the greater glider is found during clearing, the DoEE will be notified – nest boxes can be installed to provide shelter for this species. If required, prior to the commencement of Stage two, additional targeted surveys for the greater glider can be conducted. Nature and extent of likely impact See above.
Description: semi-evergreen vine thicket Brief description of the matter An area of semi-evergreen vine thicket (SEVT) (RE 11.11.18) is present on the project area (however not within the proposed CIA). The TEC SEVT locations were re-mapped as a result of a PMAV (#2015_005915, dated 18th December 2015). SEVT TEC is defined by the Commonwealth listing advice on SEVT of the Brigalow Belt (North and South) and Nandewar Bioregions. To meet the TEC (for Queensland) the community is required to contain the REs 11.2.3, 11.3.11, 11.4.1, 11.5.15, 11.8.3, 11.8.6, 11.8.13, 11.9.4, 11.9.8 or 11.11.18 (Threatened Species Scientific Committee 2001). Map 1 shows the location of the SEVT. Section 4.2 provides the PMAV for the SEVT. The SEVT is approximately 2.47 ha in size. Status, extent and condition of the matter within the affected area and also more broadly in the region The “semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions” (SEVT TEC) community is listed as endangered under the EPBC Act. Dense remnant vegetation and undulating land is located between the borrow pits and haul roads. Key threats and threatening processes There is no approved conservation advice for	The SEVT is likely to be removed with the construction of the new red mud dam in Stage three. The SEVT is not likely to be impacted from Stages one or two as works are over 600 m away from the community and it is considered that, a sufficient buffer between the proposed clearing areas and the SEVT is present. Ground truthing revealed that only the one community is present and is approximately 2.47 ha in size (refer to Section 3.1.1 for a copy of the supporting information for a PMAV prepared by Ecosure 2015). The SEVT is located at a higher elevation than the proposed works and is also upstream, therefore the proposed pits and operation is not likely to modify or destroy abiotic factors necessary for the survival of the mapped SEVT. No weed or animal pest species are to be introduced to the site. No fertilisers, herbicides or other chemicals or pollutants will be used which could kill or inhibit the ecological community. RTAY have a weed management program which will be extended to include the new clay borrow pit and surrounds. All machinery shall be declared weed free prior to mobilising to site to reduce the introduction or spread of weeds. Stage three will likely result in the removal of the SEVT (designs not yet available/confirmed). An

Species	Impact
the SEVT community (DoEE). Current threats are fragmentation, lack of connectivity, clearing, inappropriate fire regimes, pasture grass invasion and increased grazing (by domestic and native animals) (DoEE 2016).	assessment of the SEVT RE 11.11.18 within 20 m of the site has shown that approximately 2,015 ha of SEVT is mapped within the area (refer to Section 2.14 for a copy of the mapped RE 11.11.18 within 20 km of the site). Given that there is a relatively small, isolated patch on Lot 7 and considering the amount of SEVT within 20 km, Stage three is considered unlikely to have a significant impact on the wider community. Nature and extent of likely impact An assessment of the SEVT RE 11.11.18 within 20 m of the site has shown that approximately 2,015 ha of SEVT is mapped within the area. Given that there is a relatively small, isolated patch on Lot 7 and considering the amount of SEVT within 20 km, Stage three is considered unlikely to have a significant impact on the wider community.
Description: Geophaps scripta scripta (squatter pigeon) Brief description of the matter Habitat requirements: this species occurs in open forests, sparse open woodlands and scrub. These communities are generally dominated by Eucalyptus, Corymbia, Acacia or Callitris species, and can be remnant, regrowth or partly modified. They are generally found within 3 km of a water body or water course (DoEE 2016) and in dry, grassy eucalypt woodlands and open forests in sandy country, close to water and depressions in the ground (Ecosure 2016). This species breeds in well drained, gravel, sand or loamy soils in woodland and open forest vegetation with a tussock grass understorey. Breeding occurs on stony rises (on sand or gravel soils) and within 1 km of a suitable, permanent waterbody. The nest comprises a depression scraped into the ground underneath grass tussocks, bushes or fallen trees/logs. If conditions are favourable, this species can breed most of the year (DoEE 2016). Status, extent and condition of the matter within the affected area and also more broadly in the region • EPBC status: vulnerable • Observation details: no individuals were recorded during the initial dry season survey conducted by Ecosure in August 2015. Various	Staged clearing will occur. Potential habitat will be removed as part of Stages one and two (for the borrow pits and haul roads etc). Intermittent blasting activities are possible as part of the operation of the borrow pit, which could potentially disrupt the squatter pigeon. Stage three will remove the majority of potential habitat with the construction of the new red mud dam. When blasting is required, blasting activities will occur intermittently and infrequently and therefore are not likely to have a significant impact on the squatter pigeon. The proposed clearing footprint will result in the removal of approximately 94 ha of potential mapped essential habitat for the squatter pigeon (i.e. mapped as essential habitat under the VMA, excluding the previously referred Pit 9) Pits 1 and 4 will result in the removal of 1.68 ha, with the new red mud dam likely removing the remainder of the mapped potential habitat (approximately 93.14 ha). Given the wide variety of habitats this species occurs in (including disturbed areas) which remain present in the property (for Stages one and two) and surrounds, the removal of vegetation is unlikely to have a significant impact on this species. Stage three will result in the removal of the majority of the potential habitat on-site

Species	Impact
sightings of squatter pigeons at numerous locations within the site have occurred since this time, including the wet season survey in April 2016 and during other ecological surveys (e.g. opportunistic sightings during flora assessments), indicating that an existing resident population may be present (Ecosure 2016). The squatter pigeon is considered either sedentary (for southern subspecies) or locally nomadic so move around and not likely present all the time (DoEE, 2017). This species can also occur in disturbed areas some of which will remain after clearing. 109 ha within the proposed clearing footprint are mapped as essential habitat for this species by the Queensland government (DNRM 2015) – note 14.53 ha is within the previously referred Pit 9. The essential habitat area was searched for evidence of nests/and or for individuals feeding in the area with no nesting observed (Ecosure 2016). The vegetation to be removed in the project area is comprised predominately of eucalypt woodland to eucalypt open forest as well as non-remnant vegetation and pasture. Essential habitat for the squatter pigeon has been mapped in the surrounding area on the Regional Ecosystem maps. The methods used to survey for squatter pigeon within the project area were: ? Targeted survey within mapped essential habitat (20 hrs survey effort over 5 days) ? Incidental sightings ? Wet and dry season searches Key threats and threatening processes and beneficial actions and processes for the Protected Matter(s) Key threats to the squatter pigeon as described in the conservation advice by the Threatened Species Scientific Committee (TSSC, 2015) include destruction of habitat to create cattle-grazing pasture, ongoing vegetation clearance and fragmentation, overgrazing by domestic animals and feral animals such as rabbits, weeds, inappropriate fire regimes, growth of understorey vegetation, predation, nest trampling and illegal shooting.	(including the mapped essential habitat) for the squatter pigeon, however it is likely that some vegetation will be retained around the borders of the allotment and in the existing environmental area to the south. Given the relatively low densities of squatter pigeon observed, and the variety of habitats they can occur (as well as in the existing disturbed RMA 1 site), the proposed action is not considered to have a significant impact on the squatter pigeon. The squatter pigeon is likely to still use the site during stages one and two (and then will likely use the fringes of the allotment during Stage three). Timing and duration of the likely impact Operation of the borrow pit for Stages one and two are not anticipated to have a direct on-going impact to the squatter pigeon - blasting activities are unlikely, and if required would be extremely infrequent Clearing for the borrow pit, haul roads and stockpile areas will result in the removal of an estimated 108.79 ha of essential habitat (mapped on RE mapping) for stages one and two. Stage three will involve the majority of the site being cleared and a new red mud dam created. The site provides potential habitat throughout the site. Given the relatively low densities of squatter pigeon observed, and the variety of habitats they can occur (as well as in the existing disturbed RMA 1 site), the removal of the vegetation is unlikely to have a significant impact on this species. Extent of the impact The construction and operation of the borrow pit will result in the permanent localised removal of essential habitat (mapped by RE mapping). Most of the site provides potential habitat for this species, given the variety of habitats this species can occur. Stages one and two will utilise approximately 200 ha of Lot 7. The majority of the remainder of the site will be cleared and formed into a new red mud dam. Given the relatively low densities of squatter pigeon observed, and the variety of habitats they can occur (as well as in the existing disturbed RMA 1 site), the removal of the vegetation is unlikely to have a significant impact on this species.

Species	Impact
	Regardless, to mitigate any potential risk to the squatter pigeon (and other fauna) during construction, the following actions will be undertaken: ? No weed or animal pest species are to be introduced to the site. ? RTAY have a weed management program which will be extended to include the new clay borrow pit and surrounds. ? All machinery shall be declared weed free prior to mobilising to site to reduce the introduction or spread of weeds. ? A pre-clearance survey for fauna is conducted prior to clearing and a qualified fauna spotter catcher is present on site during the clearing. Likely consequence of the impact on the Protected Matter(s), including both adverse and beneficial impacts and any related social and economic impacts Direct removal of vegetation will occur as a result of the proposed action, however this is not expected to significantly impact the squatter pigeon given the relatively small numbers this species was observed, and given the range of habitats this species utilises (including disturbed areas). Benefits to the squatter pigeon will include the ongoing Pest Management Program, which is removing squatter pigeon predators from the site (particularly during Stages one and two where potential habitat will be available for the squatter pigeon). Whilst Stage three (the new red mud dam) will result in the removal of the majority of potential habitat on the lot, the pest program will likely reduce predators that may stray onto surrounding lands. During 2015, the baiting program resulted in the death of a single wild dog adjacent to the baiting station (Ecosure 2015). At least one other wild dog (potentially two) frequented baiting stations, one of which were photographed consuming inoculated bait. Feral dog densities will continue to be monitored by RTAY staff, particularly following rainfall events to monitor changes in population densities and control as required. The giant rats tail grass eradication program will continue, which will likely also reduce propagules spreading into nearby land. Economic impacts will stay positive, with the continued operation

Species	Impact
	of the RMA 1 site. Stage three will allow for continued operation of the refinery. Likelihood of the impact affecting the Protected Matter(s) Given the relatively low densities of squatter pigeon observed, and the variety of habitats they can occur (as well as in the existing disturbed RMA 1 site), the removal of the vegetation is unlikely to have a significant impact on this species. Measures available to prevent and avoid, or mitigate and repair the consequences of, the impact Measures will be put in place to mitigate any potential risk to the squatter pigeon during construction. Nature and extent of likely impact Given the relatively low densities of squatter pigeon observed, and the variety of habitats they can occur (as well as in the existing disturbed RMA 1 site), it is considered that the removal of the vegetation is unlikely to have a significant impact on this species.

2.4.2 Do you consider this impact to be significant?

Yes

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?

Yes

2.5.1 Impact table

Species	Impact
Description Gallinago hardwickii (Latham’s snipe) Brief description of the matter Habitat requirements: This species occurs in permanent and ephemeral wetlands, generally in open, freshwater wetlands with low and dense vegetation. This species also found in a variety of vegetation types around wetlands including grasslands (with rushes, reeds and sedges), coastal and alpine heathlands, lignum or tea-tree areas and open forest (DoEE 2016).	Staged clearing will occur. Intermittent blasting activities are possible as part of the operation of the borrow pit, which could potentially disrupt individuals (however blasting activities will occur intermittently and infrequently). Stage three will remove the majority of the limited woodland potential habitat with the construction of the new red mud dam. The proposed clearing footprint is unlikely to provide important habitat for the Latham’s snipe given the lack of

Species	Impact
The Latham's snipe does not breed in Australia, only migrating to Australia during the northern winter (DoEE 2016). They pass through Queensland from February to April, stopping for feeding, however the species is dispersive during this period, migrating in response to food availability and rainfall (DoEE 2016). Status, extent and condition of the matter within the affected area and also more broadly in the region • EPBC status: migratory (shorebird) • Observation details: A single individual was observed flying off from the dam site on the north-west edge of the project site in August 2015 during the dry season fauna surveys (Ecosure 2016). The methods used to survey for Latham's snipe within the project area were: ? bird surveys of dams and wetlands (32hrs of survey effort over 10 days) ? wet and dry survey One Latham's snipe was sighted in the north eastern section of the site (near the boundary) during the August 2015 survey (dry season). The vegetation to be removed in the project area is comprised predominately of eucalypt woodland to eucalypt open forest as well as non-remnant vegetation and pasture. Ephemeral waterways traverse the area but these are not considered to be habitat for Latham's snipe. The area within the project area is not considered important habitat for the species due to lack of wetland habitat, however this species is also known to occasionally utilise woodland habitats so the project area could provide limited potential habitat value. Key threats and threatening processes and beneficial actions and processes The main identified threats to this species are ongoing habitat loss, draining wetlands, diversion of water to wetlands, development, mowing of habitat and vegetation replacement (DoEE, 2016).	wetland habitat and therefore the removal of potential habitat is unlikely to have a significant impact on this species. Only one individual was observed during the surveys indicating that the site may be used occasionally by the species but it is unlikely to be important habitat for the species. Timing and duration of the likely impact The proposed clearing footprint is unlikely to provide important habitat for the Latham's snipe given the lack of wetland habitat. Therefore it is unlikely to have a significant impact on this species. Extent of the impact The proposed clearing footprint and immediate surrounds is likely to only provide marginal foraging habitat, however given the lack of wetlands it is unlikely to provide important habitat for the Latham's snipe. Removal of the vegetation is unlikely to have a significant impact on this species. Nonetheless, to mitigate any potential risk to the Latham's snipe (and other fauna) during construction, the following actions will be undertaken: ? No weed or animal pest species are to be introduced to the site. ? RTAY have a weed management program which will be extended to include the new clay borrow pit and surrounds. ? All machinery shall be declared weed free prior to mobilising to site to reduce the introduction or spread of weeds. ? A pre-clearance survey for fauna is conducted prior to clearing and a qualified fauna spotter catcher is present on site during the clearing. Likely consequence of the impact on the Protected Matter(s), including both adverse and beneficial impacts and any related social and economic impacts Direct removal of vegetation will occur throughout the stages as a result of the proposed action, however this is not expected to significantly impact the Latham's snipe as vegetation is not considered to provide important habitat for this species. Benefits to the Latham's snipe will include the ongoing Pest Management Program. Whilst Stage three (the new red mud dam) will result in the removal of the majority of vegetation on the lot, the pest program will likely reduce predators that may stray onto

Species	Impact
	surrounding lands. During 2015, the baiting program resulted in the death of a single wild dog adjacent to the baiting station (Ecosure 2015). Feral dog densities will continue to be monitored by RTAY staff, particularly following rainfall events to monitor changes in population densities and control as required. In addition, the greater presence of people accessing the area will increase reporting on pest animals and Latham's snipe sightings. The giant rat's tail grass eradication program will continue, which will likely also reduce propagules spreading into nearby land. Economic impacts will stay positive, with the continued operation of the RMA 1 site due to increases to the capacity of the dam and compliance with environmental authority conditions. Stage three will allow for continued operation of the refinery. Likelihood of the impact affecting the Protected Matter(s) The proposed clearing footprint is unlikely to provide important habitat for the Latham's snipe given the lack of wetland habitat and is unlikely to have a significant impact on this species. Measures available to prevent and avoid, or mitigate and repair the consequences of, the impact Whilst the construction and operation of the pits and haul roads is not likely to adversely affect the Latham's snipe, measures will be put in place during construction to mitigate any potential risk to the Latham's snipe. Nature and extent of likely impact Vegetation on the site is not thought to be important habitat for the Latham's snipe, therefore it is unlikely that the action will result in a significant impact on this species.
Description: Myiagra cyanoleuca (satin flycatcher) Brief description of the matter Habitat requirements: this species occurs in vegetated gullies in eucalypt forests and woodland and are recorded in wet sclerophyll forests. During migration they occur in coastal forest, woodland, mangroves and drier woodlands/open forests. They generally occur in more moist forests (DOE2016). Breeding season for this species in Queensland occurs from November to January, nesting in clusters	Staged clearing will occur. Intermittent blasting activities are possible as part of the operation of the borrow pit, which could potentially disrupt individuals (however blasting activities will occur intermittently and infrequently). Stage three will remove the majority of the limited woodland potential habitat with the construction of the new red mud dam. This species can occupy a large range of habitats and a limited number of sightings were recorded, the vegetation within the proposed clearing footprint

Species	Impact
or clustering nests (DOE2016). Suitable potential habitat for nesting is available in the project area and in areas surrounding the project area. Status, extent and condition of the matter within the affected area and also more broadly in the region • EPBC status: migratory • Observation details: satin flycatchers were recorded in several locations on site including along riparian zones and the SEVT community (Ecosure 2016). The methods used to survey for satin flycatcher within the project area were: ? bird survey ? incidental sightings throughout site ? wet and dry survey The satin flycatcher was observed directly adjacent (just north) to proposed Pit 3, and northeast of Pit 1 (near the recently constructed Pit 9). The majority of vegetation to be removed in the project area is comprised of eucalypt woodland to eucalypt open forest, as well as non-remnant vegetation and cleared areas. Ephemeral waterways traverse the area. Vegetation within the proposed clearing footprint is considered to provide some habitat value for the satin flycatcher. Preferences expand during migration, with the species recorded in most wooded habitats except for rainforests (DOE2016). Given that this species can occupy a large range of habitats, the species is considered widespread and similar habitat will remain outside the project area, vegetation within the proposed clearing footprint is not considered to provide important habitat for this species. Key threats and threatening processes and beneficial actions and processes The main identified threats to this species are clearing and logging of forests, particularly the loss of mature forests. This species is largely absent from regrowth forests (SPRAT).	is not considered to provide important habitat for this species. Timing and duration of the likely impact This species can occupy a large range of habitats and a limited number of sightings were recorded, the vegetation within the proposed clearing footprint is not considered to provide important habitat for this species. Extent of the impact The clearing and operation of the proposed action is considered unlikely to have a significant impact on the satin flycatcher. Regardless, to mitigate any potential risk to the satin flycatcher during construction, the following actions will be undertaken: • No weed or animal pest species are to be introduced to the site. • RTAY have a weed management program which will be extended to include the new clay borrow pit and surrounds. • All machinery shall be declared weed free prior to mobilising to site to reduce the introduction or spread of weeds. • A pre-clearance survey for fauna is conducted prior to clearing and a qualified fauna spotter catcher is present on site during the clearing. Likely consequence of the impact on the Protected Matter(s), including both adverse and beneficial impacts and any related social and economic impacts Direct removal of vegetation will occur as a result of the proposed action, however this is not expected to significantly impact the satin flycatcher given the large range of habitats this species can occupy. Furthermore, a limited number of sightings were recorded, the vegetation within the proposed clearing footprint is not considered to provide important habitat for this species. Economic impacts will stay positive, with the continued operation of the RMA 1 site due to increases to the capacity of the dam and compliance with environmental authority conditions. Stage three will allow for continued operation of the refinery. Likelihood of the impact affecting the Protected Matter(s) Removal of vegetation is not expected to significantly impact the satin flycatcher given the large range of habitats this species can occupy. Furthermore, the species is considered widespread. The vegetation within the proposed

Species	Impact
	clearing footprint is not considered to provide important habitat for this species. Measures available to prevent and avoid, or mitigate and repair the consequences of, the impact Whilst removal of vegetation (and operation of the new red mud dam) is not considered likely to adversely affect the satin flycatcher, measures will be put in place to mitigate any potential risk to the satin flycatcher and the wild dog and weed eradication programs will be expanded. Nature and extent of likely impact Removal of vegetation and operation of the activity is not expected to significantly impact the satin flycatcher.
Description: Rhipidura rufifrons (rufous fantail) Brief description of the matter Habitat requirements: occurs in wet sclerophyll forest frequently in gullies dominated by eucalyptus species. Understorey is generally dense and ferns are often present. Sometimes found in secondary regrowth in forests or rainforests (DOE2016). Breeding season in occurs from September to February, with nests in trees, shrub or vine (DOE2016). Suitable potential habitat for nesting is available on-site and in areas surrounding the site. Status, extent and condition of the matter within the affected area and also more broadly in the region • EPBC status: migratory • Observation details: the species was recorded during surveys undertaken by Ecosure in the riparian vegetation and SEVT community. The methods used to survey for rufous fantail within the project area were: ? bird survey ? incidental sightings throughout site ? wet and dry survey One rufous fantail was observed during the surveys in the SEVT. The vegetation to be removed in the project area is predominately eucalypt woodland to eucalypt open forest, as well as non remnant vegetation and cleared areas. Ephemeral waterways traverse the area. It is likely that the SEVT habitat will be removed for construction of the new red mud dam (Stage 3). This species is considered common and widespread in suitable habitat (DoEE, 2017). Given the widespread habitat this species	Staged clearing will occur. Intermittent blasting activities are possible as part of the operation of the borrow pit, which could potentially disrupt individuals (however blasting activities will occur intermittently and infrequently). Stage three will remove the SEVT, however as this habitat was limited in size, it is not considered to provide important habitat for this species. One rufous fantail was observed during the survey. Given this species is considered common and widespread in suitable habitat, and that it generally prefers more moist environs, vegetation with the proposed clearing footprint is considered to provide limited habitat value for the rufous fantail. Timing and duration of the likely impact The vegetation within the proposed clearing footprint is not considered to provide important habitat for this species. Extent of the impact The clearing and operation of the proposed action is considered unlikely to have a significant impact on the rufous fantail. Regardless, mitigate any potential risk to the rufous fantail during construction, the following actions will be undertaken: • No weed or animal pest species are to be introduced to the site. • RTAY have a weed management program which will be extended to include the new clay borrow pit and surrounds. • All machinery shall be declared weed free prior to mobilising to site to reduce the introduction or spread of weeds. • A pre-clearance survey for fauna is conducted prior to clearing and a qualified fauna spotter

Species	Impact
occupies, and that it generally prefers more moist environs, vegetation within the proposed clearing footprint is considered to provide limited habitat value for the rufous fantail. Key threats and threatening processes and beneficial actions and processes The main identified threats to this species fragmentation, loss of moist forest breeding habitat from clearing and urbanisation (SPRAT).	catcher is present on site during the clearing. Likely consequence of the impact on the Protected Matter(s), including both adverse and beneficial impacts and any related social and economic impacts Direct removal of vegetation will occur as a result of the proposed action, however this is not expected to significantly impact the rufous fantail as the vegetation it considered to provide limited value to this species. Economic impacts will stay positive, with the continued operation of the RMA 1 site due to increases to the capacity of the dam and compliance with environmental authority conditions. Stage three will allow for continued operation of the refinery. Likelihood of the impact affecting the Protected Matter(s) Direct removal of vegetation will occur as a result of the proposed action, however this is unlikely to significantly impact the rufous fantail as the vegetation it considered to provide limited value to this species. Measures available to prevent and avoid, or mitigate and repair the consequences of, the impact Whilst the action is not expected to significantly impact this species, measures will be put in place to mitigate any potential risk to the rufous fantail and the wild dog and weed eradication programs will be expanded. Nature and extent of likely impact Removal of vegetation and operation of the activity is not expected to significantly impact the Rufous fantail.
Description: Merops ornatus (rainbow bee eater)	Since the fauna surveys in 2015 and 2016, this species has been re-listed to marine, and has not been addressed in this referral. The proposed action is outside of marine areas and is not expected to impact marine areas or marine species.

2.5.2 Do you consider this impact to be significant?

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 a water resource related to coal/gas/mining?

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.

Lot 7 SP228453 is an 898 ha parcel of land situated adjacent to the current RMA 1 dam site. The site is situated in the Brigalow Belt bioregion and forms part of the Calliope catchment, with around 35.5% of the site is mapped as containing remnant vegetation (CQG 2013).

The site has largely been impacted by vegetation clearing in the past and is heavily infested with the non-native weed *Sporobolus pyramidalis* (giant rat's tail grass).

The baseline report (CQG 2013) identified six broad habitat types (Table 5) occurring in the project area (Lot 7).

Table 5 Broad habitat types

Habitat

Habitat values

Department of Natural Resources & Mines (DNRM)- mapped regional ecosystems (REs) within the project area that contain potential habitat

Flat, gentle grassland slopes

Largely cleared, some fallen logs and other ground habitat. Few large hollow-bearing trees

Unmapped

Gullies and drainage lines

Some vine thicket with potential habitat for threatened species

11.3.25 – Riverine

11.11.18 – SEVT

Woodlands on low slopes and hills (predominate habitat remaining onsite)

Some large hollow bearing trees, fallen logs and debris, leaf litter and rocky scree

11.3.4 – Alluvium flats *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains

11.3.26 – *E. moluccana*

11.11.4 – *Eucalyptus crebra* woodland

11.11.15 – *Eucalyptus crebra* woodland

Ridge crests

Some hollow bearing trees, rocky outcrops and fallen logs, vine thicket

11.11.5 – Microphyll vine forest

11.11.18 – SEVT

11.11.4c – *Eucalyptus crebra, Corymbia citriodora*

Freshwater lake, dams, streams

Waterbird habitat – habitat diversity limited

Unmapped

Freshwater marsh, soak

Water bird habitat – habitat diversity limited

Unmapped

During the wet and dry fauna surveys undertaken by Ecosure (2016), seven species of amphibian, 84 birds, 20 mammal and 12 reptiles were recorded (including the MNES which are the subject of this action form). A number of other species listed under the EPBC Act (returned in the protected matters search tool) potentially occur on-site, however were not observed during the surveys. Since the original surveys, the greater glider (*Petauroides volans*) has become listed as vulnerable, which has been identified by DoEE to be discussed in the referral.

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

A number of dams are located across the project area. A series of stream order 1 waterways traverse the site (beginning in the southern section of the site and traversing to the north). Two stream order 1 waterways merge in the north eastern section of the site forming a stream order 2 waterway. The waterways are ephemeral, and flow in periods of high rainfall. Sections of the waterways formed small ponds during the fauna survey.

Topography on the site is undulating with a series of peaks within the site and land falling in all directions. Table 6 below provides a summary of topography at each proposed pit. Map 4 in Section 3.2.1 has a topography map.

Table 6 Summary of topography

Location / Pit number

Topography

1

Generally occurs at the base of a peak. Topography descends in a northerly direction. A gully occurs in the western section of the pit.

2

Occurs in gently sloping land (from a south to north direction). The southern section of the site is at 59 m Australian Height Datum (AHD), and slopes to the north to 52 m AHD.

3

Occurs in a relatively flat area of the site. Topography rises gently in all directions from a centroid at approximately 50 m AHD to approximately 55 m AHD.

4

Generally occurs on a flat area of the site. The grade gently slopes from the south to the north.

5

Occurs in the slopes of a peak to the west and occurs over a peak in the eastern section of the pit. Topography ranges between approximately 80 m AHD to 63 m AHD.

6

Generally occurs over three peaks. A gully occurs in the northern section of the proposed pit.

7

A peak is present in the eastern and western section of the proposed pit, with a gully traversing from north to south in the centre of the pit.

8

Two peaks occur in the centre of the proposed pit and land slopes in a general north and south direction from the peaks.

10

Occurs on the western side of a peak. The peak occurs at 80 m AHD and descends in a western direction. A gully is located at the base of the pit traversing in a south to north direction.

Two environmental bores are present on the RMA 2 lot. These bores were established as background bores for RMA 1 groundwater monitoring. It is considered unlikely that the clay and rock extraction activities will impact significantly on the quality or quantity of groundwater at the site. Shallow excavation is not considered likely to impact upon groundwater. An assessment will be undertaken once the excavation level has been determined. In the event that a water table is encountered, water will be pumped from the clay and rock extraction areas (RTAY).

Prior to the construction of the pits for each stage, additional bores will be installed as soon as possible prior to construction and their levels monitored on a minimum monthly basis prior to construction (to gain an understanding of the natural fluctuations to groundwater level) and during operation of the pits to monitor the levels. The number of bores is still being determined. Possible issues regarding groundwater include a potential drop in groundwater during excavation of the pits, or raising of the water table due to vegetation clearing. Prior to commencing pit excavation, a groundwater specialist is to be engaged to provide a groundwater management plan to identify trigger levels for any corrective actions or further investigations should ground water levels fluctuate.

If groundwater incursion occurs, the pit will be dewatered. A groundwater specialist will be consulted should groundwater be encountered. The groundwater can potentially be re-injected into the system away from the pit if large volumes are encountered and if recommended by the groundwater specialist.

Groundwater levels were recorded in Lot 7 from 2002 to 2017 by Rio Tinto. BH35 and 34 are the closest boreholes to the proposed borrow pit (see Map 3 bores in Section 3.2.1). The lowest recording at BH34 is at 27.44 standing water level in the year 2007, and the highest reading is 14.95 in 2008. The lowest recording at BH35 is 30.76 in the year 2002 and the highest is 14.56 in 2008. Bore details are provided in Table 7 below.

Table 7 Bore hole details

Monitoring Point

MGA Coordinates

(GDA94)

East

MGA Coordinates

(GDA94)

North

RL (m) to top of Bore Casing

Depth of bore casing (m)

RL (m) to Ground

580-BH-34

302401.87

7359865.46

71.98

27.4

71.61

580-BH-35

302353.87

7358813.46

83.25

31.15

82.74

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

A search of the pre-clearing regional ecosystem mapping shows that two land zones, 3 and 11, occur within Lot 7. The regional ecosystem descriptions (Queensland government) land zone

definitions, describe these zones as:

Land zone 3: recent Quaternary alluvial systems, including closed depressions, paleo-estuarine deposits currently under freshwater influence, inland lakes and associated wave built lunettes. Excludes colluvial deposits such as talus slopes and pediments. Includes a diverse range of soils, predominantly Vertosols and Sodosols; also with Dermosols, Kurosols, Chromosols, Kandosols, Tenosols, Rudosols and Hydrosols; and Organosols in high rainfall areas.Land zone 11: Metamorphosed rocks, forming ranges, hills and lowlands. Primarily lower Permian and older sedimentary formations which are generally moderately to strongly deformed. Includes low- to high-grade and contact metamorphics such as phyllites, slates, gneisses of indeterminate origin and serpentinite, and interbedded volcanics. Soils are mainly shallow, gravelly Rudosols and Tenosols, with Sodosols and Chromosols on lower slopes and gently undulating areas. Soils are typically of low to moderate fertility.

The Department of Natural Resources and Mines Detailed surface geology – Queensland (DNRM, 2017) has mapped the site as containing a variety of geological units occurring at the project area:

DCa: Thinly interbedded fine-grained sandstone and siltstone and thick beds of conglomerate with andesitic to dacitic clasts and siltstone rip-up-clastsPRg/b: Grey, fine to coarse-grained, equigranular to porphyritic gabbro, hornblende diorite and quartz diorite to biotite-hornblende quartz monzodioriteCr: Dark grey mudstone, siltstone, felsic volcaniclastic sandstone, polymictic conglomerate, ooid-bearing sandstone and conglomerate with mudstone rip-up clasts; oolitic and pisolitic limestone and minor skeletal limestone; rare rhyolitic ignimbrite.

Vegetation is comprised of a fragmented landscape composed of remnant and non-remnant vegetation. Previous surveys undertaken have found six broad habitat types within five REs. An area of SEVT (RE 11.11.18) is present on Lot 7 which is also identified as a TEC under the EPBC Act. The TEC SEVT locations were re-mapped as a result of a PMAV (#2015_005915, dated 18th December 2015).

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

The project area (incorporating the proposed clay borrow pit area) is comprised of a mixture of native remnant and non-remnant vegetation, and cleared pasture areas. Topography is

undulating across the project area.

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

The Ecosure flora report (August 2015) identified and mapped eight REs on site (Table 8). This table also notes the status of each RE under the Queensland *Vegetation Management Act 1999* (VM Act).

Table 8 Regional ecosystems

RE	Description
11.3.4 (11.7 ha) VM Act Status – Of Concern	*Eucalyptus tereticornis* woodland to open forest. Other tree species that may be present and locally dominant include *E. camaldulensis, Corymbia tessellaris, E. coolabah, C. clarksoniana, E. populnea or E. brownii, E. melanophloia, E. platyphylla or Angophora floribunda. E. crebra* and *Lophostemon suaveolens* may be locally dominant (subregion 14). A shrub layer is usually absent, and a tall grassy ground layer is often prominent, and may include any of *Bothriochloa bladhii subsp. bladhii, Aristida spp., Heteropogon contortus, Dichanthium spp.* and *Themeda triandra*. Heavily grazed areas tend to have shorter or annual grasses such as *Dactyloctenium radulans* or *Bothriochloa spp*. Occurs on Cainozoic alluvial plains and terraces. Occurs on variety of soils, including deep cracking clays, medium to fine textured soils, and deep texture-contrast soils. (BVG1M: 16c)
11.3.25 (12.4 ha) VM Act Status – Of Concern	*Eucalyptus camaldulensis* or *E. tereticornis* open forest to woodland. Other tree species such as *Casuarina cunninghamiana, E. coolabah, Melaleuca bracteata, Melaleuca viminalis, Livistona spp*. (in north), *Melaleuca spp*. and *Angophora floribunda* are commonly present and may be

locally dominant. An open to sparse, tall shrub layer is frequently present dominated by species including *Acacia salicina, A. stenophylla* or *Lysiphyllum carronii*. Low shrubs are present, but rarely form a conspicuous layer. The ground layer is open to sparse and dominated by perennial grasses, sedges or forbs such as *Imperata cylindrica, Bothriochloa bladhii, B. ewartiana, Chrysopogon fallax, Cyperus dactylotes, C. difformis, C. exaltatus, C. gracilis, C. iria, C. rigidellus, C. victoriensis, Dichanthium sericeum, Leptochloa digitata, Lomandra longifolia* or *Panicum spp*. Occurs on fringing levees and banks of major rivers and drainage lines of alluvial plains throughout the region. Soils are very deep, alluvial, grey and brown cracking clays with or without some texture contrast. These are usually moderately deep to deep, soft or firm, acid, neutral or alkaline brown sands, loams or black cracking or non-cracking clays, and may be sodic at depth (Burgess 2003). (BVG1M: 16a)

RE 11.3.26

(5 ha)

VM Act Status – Least Concern

Eucalyptus moluccana or *E. woollsiana +/- E. populnea +/- E. melanophloia* tall open forest to woodland +/- *Allocasuarina luehmannii* low tree layer and a grassy ground layer. In northern subregions, there may be shrub layer of any of *Eremophila mitchellii, Flindersia dissosperma, Citrus glauca* or *Petalostigma pubescens*, with a sparse grassy ground layer. Occurs on margins of Cainozoic alluvial plains on deep texture contrast soils. (BVG1M: 13d)

RE 11.11.4

(161.7 ha)

VM Act Status – Least Concern

Eucalyptus crebra woodland +/- *Corymbia citriodora +/- E. tereticornis +/- C. tessellaris +/- Lophostemon suaveolens* with *Xanthorrhoea spp*. and *Macrozamia spp*. often present in shrub layer. *Eucalyptus moluccana* often dominates the tree canopy on lower colluvial slopes. Generally occurs on coastal hills and ranges formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. (BVG1M: 13c)

RE 11.11.4c

(8 ha)

VM Act Status – Least Concern

Eucalyptus moluccana dominated woodland. Other tree species listed above may occur as sub or co-dominant species. (BVG1M: 13d)

RE 11.11.5

(3.7 ha)

VM Act Status – Least Concern

Microphyll rainforest (with or without *Araucaria cunninghamii* emergents) and semi-evergreen vine thicket. Floristics and structure varies with site. There is usually a continuous tree canopy (9 - 15m high) with a wide range of species including *Flindersia australis, Backhousia kingii, Excoecaria dallachyana, Melia azedarach, Ficus spp., Strychnos psilosperma, Macropteranthes leichhardtii* and *Alstonia constricta*. An emergent tree layer (12- 20m high) commonly occurs with species including *Brachychiton australis, B. rupestris, Flindersia australis, Ficus spp. Araucaria cunninghamii* and sometimes *Eucalyptus spp*. There is a shrub layer (1-3m high) with density depending on canopy cover and frequent species including *Croton spp., Abutilon spp., Capparis spp. Acalypha eremorum* and *Codonocarpus attenuatus*. Ferns, mosses and vines are common. Occurs on hilly terrain with slopes ranging from 55 and up to 80% locally. Formed from moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Associated soils are generally shallow loams and clays with minor areas of deeper cover. (BVG1M: 7a)

RE 11.11.15

(111.6 ha)

VM Act Status – Least Concern

Eucalyptus crebra +/- Corymbia erythrophloia +/- E. populnea +/- E. melanophloia +/- C. tessellaris +/- C. clarksoniana woodland to open woodland often with a shrubby layer. *Eucalyptus exserta* and *E. platyphylla* present in central coastal part of bioregion. Occurs on undulating rises and low hills, often with distinct strike pattern formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics and Permian sediments. (BVG1M: 13c)

RE 11.11.18

(2.5 ha)

VM Act Status – Endangered

EPBC Act Status - Endangered

Semi-evergreen vine thicket. Occurs on undulating plains, rises and gentle slopes of ranges formed on moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. (BVG1M: 7a)

Refer to Section 3.1 for further information on flora and vegetation characteristics.

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

The maximum depth of excavation will be to 5 m. Table 9 below provides the general topography ranges.

Table 9 Topography ranges (approximate)

Location	Topography
1	Ranges approximately between 80 m AHD to 64 m AHD.
2	Ranges approximately between 66 m AHD to 52 m AHD.
3	Ranges approximately between 55 m AHD to 50 m AHD.
4	Ranges approximately between 96 m AHD to 60 m AHD.
5	Ranges between approximately 80 m AHD to 63 m AHD.
6	Ranges between approximately 81 m AHD to 63 m AHD.
7	Ranges between approximately 121 m AHD to 80 m AHD.

8

Ranges between approximately 140 m AHD to 130 m AHD.

10

Ranges between approximately 80 m AHD to 64 m AHD.

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

Proposed Pits 6, 7 and 10 predominately occur within mapped remnant vegetation. Part of Pit 4 and sections of the proposed north – south haul road (linking Pits 9, 5, 6 and 7) occurs in mapped remnant vegetation. The remainder of the project area is located in non-remnant vegetation and pasture areas (note - some areas are cleared and some contain scattered trees). There is no erosion evident across the site. The area is heavily infested with the non-native weed Sporobolus pyramidalis (giant rat's tail grass). Other weed species occurring occasionally throughout the site include Cryptostegia grandiflora (rubber vine), Lantana camara (lantana), Opuntia sp. (prickly pear). These species are classed as Category 3 restricted matter under the Biosecurity Act 2014. Other environmental weeds such as Hyparrhenia rufa subsp. rufa (thatch grass) and Tecoma stans (yellow bells) are present on the site and have been subject to weed management as part of the existing Pest Management Program, particularly in areas where they posed a higher risk to essential habitat. There is evidence of feral pigs and wild dogs on the site through scats, activity and confirmed sightings.

Stage three (new red mud dam) will occur within the remainder of the vegetation throughout the majority of Lot 7 (designs are not yet available as the construction of the new red mud dam is not forecast to occur for approximately another 10 years).

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

N/A. The DoEE Protected Matters Search Tool does not indicate that the project area lies within or near a Commonwealth Heritage place or other places recognised as having heritage values within the vicinity of the site

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

RTAY has advised a CHMP is in place with PCCC Claim Group. The CHMP applies to the operation of the Yarwun Alumina Refinery including the wharf, jetty, conveyor, caustic bladders, overland conveyor, unloading station and residual management areas.

Cultural heritage surveys have been completed and agreed management measures have been implemented as a result of the surveys. The CHMP sets out that Yarwun Alumina Refinery may undertake activates in the surveyed areas in accordance with the agreed management

measures. Any other activities may not be undertaken unless a Cultural Heritage Site Disturbance Permit has been agreed to with the PCCC in accordance with the CHMS).

RTAY advised that relics have been found and were removed from the property.

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

Lot 7 is freehold land under the ownership of Rio Tinto

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

A clay borrow pit (Pit 9) and associated stockpiles and haul roads are currently in operation on RMA 2 (in the north-eastern section of Lot 7). Apart from the operation of Pit 9, Lot 7 is currently predominately vacant and comprises a parcel of land with remnant and regrowth vegetation. A series of internal trails/tracks intersect the property.

RMA 2 is a SDA and is intended for use as a waste management precinct within the Gladstone state development area development scheme.

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.

RTAY will be undertaking a number of measures to further mitigate any potential impacts to fauna (outlined in the table 10 below). The majority of these measures will benefit most fauna regardless of listing (i.e. not just the MNSES).

Table 10 Mitigation measures

Issue	Mitigation
Weed incursion	all machinery shall be declared weed free prior to mobilising to site to reduce the introduction or spread of weedsgiant rat’s tail grass eradication program, as part of a broader weed management program
Vehicle strike	speed restrictions along the haul route will be implementedsignageinductions including information about the koala and risk managementescapes (such as rope ladders, wooden poles or reused tree trunks) along sections of the haul road with batters ≥ 1:1
Pest animals	dog baiting program as part of an ongoing pest management program

Steep batters along sections of haul road

a key measure for reducing time spent by koalas on the haul roads in areas where steep batters are located will be the installation (and maintenance) of escapes (such as ropes, wooden poles or recycled tree trunks) in areas where batters are 1:1 or steeper:escapes are to be installed at maximum 50 m intervals in areas with steep batters (≥ 1:1) as a precautionary measureif the koala crosses onto the haul road and cannot traverse a steep batter the escapes will allow the koala to grip and climb up the batterto further ensure the koala exits the haul road as quickly as possible, the positioning of the escapes should enter/exit in close proximity to treed areas (with favoured koala feed trees as close as possible to the ladders as possible, whist complying with vegetation restrictions of tree proximity to the haul road) - this will assist the koala to quickly traverse the haul road as it will sense the nearby trees.

Impacts during clearing/blasting

fauna spotter catchers will be present during clearingfauna spotter catchers will conduct a pre-clearance survey and be present on site during the clearing.if any koalas are observed, a no go area will be established around the koala and the tree and the koala will be left to disperse on its own accord. The koala will be monitored until it is out of the works zone. Other fauna will be translocated out of the clearing zone.if any blasting is to occur, fauna spotter catchers will assess the borrow pit area and surrounds to ensure there are no koalas (or other fauna) impacted by blasting (note, blasting is not likely, and if required would be infrequent).

Increased reporting of sightings

sightings of koalas will be encouraged to be reported to the environmental advisors and records kept (including assessment of effectiveness of mitigation measures).during the induction process, information on koala illnesses and signs of sickness to observe will be given out so that wildlife carers can be contacted if any sick koalas are encountered.koala information (e.g. presence in the area, speed restrictions, reporting any sightings, not touching the koala etc.) will form part of the induction package for all workers. Sightings will also be recorded.

An offsets outline is being prepared to commence the potential offsetting process should offsets be required. The outline will consider the following options for RTAY to consider:

area of koala habitat to be removedassessment of bioregion and vegetation potentially suitable for an offset location (assessment of pre-clearing RE vegetation mapping and remnant vegetation types)staging and timing of offsetslocate council and state managed environmental reserves and analysis of planning intent (the offset site location will be required to be expanded if no suitable sites are located)summary of options for offsetting (not identifying suitable sites)mechanisms in which to secure and manage offsetsconsiderations that will be accounted for in locating a potential offset site (such as connectivity, barriers etc) and assessment of available database records and habitat mapping – Gladstone and Rockhampton Councils as well as the CQ Koala Research Centre will be contacted to seek koala record sightingsthree examples of the offset calculator to show examples of offsets required and how certain offset quality and timing changes the calculator

Advanced offsets will be discussed with RTAY. Possible options for offsetting include:

purchasing land and undertaking restoration either through weed control or revegetation works (protection mechanisms could include statutory covenants)entering into a lease agreement over private land and undertaking restoration and/or revegetation workspurchasing advanced offsetsentering into an agreement on local or state land and undertaking restoration or revegetation works.

Other options could also involve pest control such as control of wild dogs.

Should offsets be required, an Offsets Package will be prepared. This will provide the chosen option/s (prepared in accordance with DoEE Offsets Guide), offset site condition and amount of offset required in accordance with the offset calculator.

The offsets will be staged, with no offset anticipated in Stage one. Stage two offsets will likely be commenced prior to Stage two construction works occurring. Stage three offsets will commence prior to Stage three construction works occurring.

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 whole area is planned for state development. If offsets are required, the offsets would be chosen in an area to protect and supplement existing suitable habitat for the koala, which would in turn provide habitat for a range of other species.

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

Listed threatened species and communities - Yes

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.

One threatened fauna species (the koala) is considered to be significantly impacted (refer to Section 2.4.1 for discussion on these species). It is not likely that the koala will be impacted in Stage one, however it is likely that the removal of habitat with Stage two and three will be significant.

Given the amount of SEVT available in the area, the removal of the small, isolated amount (2.4 ha) of SEVT is not considered to result in a significant impact.

The remaining species, squatter pigeon, greater glider, Latham's snipe, rufous fantail and satin flycatcher are unlikely to be significantly impacted by the proposed action (vegetation clearing or operation of the new red mud dam). The project area is not considered to be important habitat for the Latham's snipe given the lack of wetland habitat. The remainder of the species occur in a variety of habitats and although they have been recorded on-site in relatively low numbers, the site is not thought to provide important habitat for these species. Each species is discussed in further detail in Section 2.4.1 to provide background information for DoEE to consider.

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.

RTAY is a wholly owned subsidiary of the Rio Tinto corporate group. All Rio Tinto managed operations and business units are required to have and maintain a certified Environmental Management System conforming to the ISO 14001 international standard, which is certified to the business by an accredited body. ISO 14001 provides a framework for an organisation to identify and manage the environmental impact of its activities, products and services, and to improve its environmental performance continually.

This includes procedures for monitoring, corrective action (where necessary) and management review. Sites regularly undergo internal and external audits to ensure they comply with their Environmental Management System, Rio Tinto Environmental Management System standard and ISO 14001.

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.

On 20 November 2013, RTAY pled guilty to the offence of contravention of a development condition of a development approval, pursuant to section 435(2) of the EPBC Act (Qld) (in the form published as at the date of the offence). The offence arose out of a failure by RTAY to have a specified volume of storage capacity in its residue management area dam by 1 November 2012 (the relevant volume was constructed by the end of March 2013). No conviction was recorded. RTAY has taken appropriate action to prevent recurrence of the offence.

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.

RTAY will undertake the action in accordance with its Health, Safety, Environment and Community (HSEC) Policy. All Rio Tinto operations must implement HSEC standards and procedures in accordance with the Rio Tinto global HSEC Policy, which aims to build and maintain world class performance in health, safety, environment and communities.

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?

Yes

6.4.1 EPBC Act No and/or Name of Proposal.

A referral was also undertaken within the past 12 months: Clay borrow pit and associated haul roads and stockpiles, Rio Tinto Alcan Yarwun Residue Disposal Area, Aldoga, Queensland (EPBC 2017/7858).

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
*Department of the Environment (2014), EPBC Act Referral Guidelines for the vulnerable koala (combined populations of Queensland. New South Wales and the Australian Capital Territory). Commonwealth of Australia. *Department of the Environment (2016). Gallinago hardwickii in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat. *Department of the Environment (2016). Geophaps scripta scripta in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat. *Department of the Environment (2015). Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species. Department of the Environment, Canberra. *Department of Environment (2013), Matters of National Environmental Significance – Significant impact guidelines 1.1. Department of the Environment,	Reliable sources (majority from state or federal sources, or reporting undertaken in house).	No noted uncertainties with sources (majority from state or federal sources, or reporting undertaken in house).

Reference Source	Reliability	Uncertainties
Canberra. *Department of the Environment (2016). Merops ornatus in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat. *Department of the Environment (2016). Myiagra cyanoleuca in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat. *Department of the Environment (2016). Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat. *Department of Environment and Energy (2016), Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=24 *Department of the Environment (2016). Rhipidura rufifrons in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed Thu, 27 Oct 2016 DNRM 2015, Vegetation Management Supporting Map, Department of Natural Resources and Mines, Queensland, http://www.derm.q		

Reference Source	Reliability	Uncertainties

ld.gov.au/vegetation/code_review_06/eh_review.html DNRM 2017, Detailed surface geology, Queensland, Department of Natural Resources and Mines, Queensland https://www.business.qld.gov.au/industries/mining-energywater/ resources/geoscience-information/gsq Ecosure (2016), Vegetation clearing report – Lot 7, SP228753, Report to RTA Yarwun Pty Ltd. Ecosure, Rockhampton. Ecosure (2016), Conservation significant fauna survey report, Report to RTA Yarwun Pty Ltd, Rockhampton. Ecosure (2015), Conservation significant fauna survey report, Report to RTA Yarwun Pty Ltd., Rockhampton. Ecosure (2015), Supporting information for a PMAV over Lot 7 SP228453, Report to RTA Yarwun Pty Ltd., Rockhampton. Ecosure (2015), Weed and feral species management, Report to Rio Tinto Alcan Yarwun, Rockhampton. Pizzey & Knight 2010, The Field Guide to the Birds of Australia, 8th edn, Sydney, Harper Collins Publishers, p. 328. Red Earth engineering (2016), RMA2 Borrow Investigation – Area 9 Geotechnical Investigation and Borrow Assessment Report. Red Earth Engineering, Spring Hill. Rio Tinto (2017). RMA 2 clay borrow planning report – change application for an SDA approval. RTAY, Qld. RPS (2014), Information Request Response In response to letter received from the Office of the Coordinator General in regards to an Application for a Material

Reference Source	Reliability	Uncertainties
Change of Use for Waste Management – Extraction of Clay and Rock from RMA 2 for Construction of Dam Wall on RMA 1 at: Bruce Highway, Yarwun, Queensland 4694. RPS, Gladstone. *Threatened Species Scientific Committee (2001). Commonwealth Listing Advice on Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions. Department of the Environment, Canberra. Threatened Species Scientific Committee (2016). Approved Conservation Advice for Petauroides volans (greater glider). Canberra: Department of the Environment.		

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?

Investigations have been undertaken to identify the extent and location of the clay resources, transporting materials was not considered a viable option due to costs and emissions. Due to the high importation costs and limited supply options, RTAY propose to extract clay for this purpose from RMA 2 (located adjacent to RMA 1) (RTAY, 2017).

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

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

General Manager Operations

9.2.2 First Name

Colin

9.2.3 Last Name

McGibbon

9.2.4 E-mail

colin.mcgibbon@riotinto.com

9.2.5 Postal Address

PO Box 1479
Gladstone QLD 4680
Australia

9.2.6 ABN/ACN

ACN

137266301 - RTA Yarwun Pty Ltd

9.2.7 Organisation Telephone

07 49718187

9.2.8 Organisation E-mail

alison.cox@riotinto.com

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, Colin Edward McGibbon, 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: 17/11/17

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

General Manager Operations

9.5.2 First Name

Colin

9.5.3 Last Name

McGibbon

9.5.4 E-mail

colin.mcgibbon@riotinto.com

9.5.5 Postal Address

PO Box 1479
Gladstone QLD 4680
Australia

9.5.6 ABN/ACN

ACN

137266301 - RTA Yarwun Pty Ltd

9.5.7 Organisation Telephone

07 49718187

9.5.8 Organisation E-mail

alison.cox@riotinto.com

Proposed designated proponent - Declaration

I, _____, 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: .....

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Specialist Environment

9.8.2 First Name

Alison

9.8.3 Last Name

Cox

9.8.4 E-mail

alison.cox@riotinto.com

9.8.5 Postal Address

PO Box 1479
Gladstone QLD 4680
Australia

9.8.6 ABN/ACN

ACN

137266301 - RTA Yarwun Pty Ltd

9.8.7 Organisation Telephone

07 49718187

9.8.8 Organisation E-mail

alison.cox@riotinto.com

Referring Party - Declaration

I, Alison Cox, 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: 16/11/17

Appendix A - Attachments

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

1. 2017-7858_referral-decision-letter_to_proponent_signed.pdf
2. 2017-7858_referral-decision-notice_signed.pdf
3. 2017_11_13_gisfilesforreferral.zip
4. 20141218_2nd_pn_ad_proof_5904103_ron.gurgacz_309.png
5. 20141218_ltr_to_cg_notice_of_pn_commence_119060-2.pdf
6. 20150105_photo_of_pn_signage_dscf8053.jpg
7. 20150105_scan_of_ltrs_to_aos_x_10_119060-2.pdf
8. 20171025_rta_yarwun_ea_doc00087690.pdf
9. conservation_significant_fauna_survey_report.pdf
10. conservation_significant_fauna_survey_report_final.pdf
11. dgbn16_1644.pdf
12. hsec-a-01_hsec_policy.pdf
13. koala_presence_absence_survey.pdf
14. pr2925_mp1_matterofnationalenvsigr1.compressed.pdf
15. pr2925_mp2_locationofkoalasurveysitesr1.compressed.pdf
16. pr2925_mp3_boresr1_.pdf
17. pr2925_mp4_topographyr1.pdf
18. pr2925_mp5_sevtcontextr1.pdf
19. supporting_information_for_a_pmav.pdf