PUBLIC NOTIFICATION

Approval Sought:	Material Change of Use
Proposed Development:	Extractive Industry and Operational Works for clearing vegetation
Where:	294 Hume Road and 397 Power Station Road, Kabra
Lot Description:	Lot 1 on RP616642 and Lot 44 on SP140243
Application Reference:	D/163-2021

Make a submission from:

10 June 2022 to 1 July 2022

You may make a submission to Rockhampton Regional Council

PO BOX 1860, Rockhampton QLD 4700
Email: enquiries@rrc.qld.gov.au
Phone: 07 4932 9000 or 1300 22 55 77

Click here to view the 'Guide to public notification of development and change applications'

For more information on planning requirements within the Rockhampton Region feel free to visit www.rrc.qld.gov.au



Groundwork Plus Resources Environment Planning Laboratories
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ABN 13 609 422 791

30 November 2021

Ref: 1662.DA1.310.003

Chief Executive Officer
Rockhampton Regional Council
PO Box 1860
ROCKHAMPTON QLD 4700

Dear Sir/Madam

DEVELOPMENT APPLICATION FOR A MATERIAL CHANGE OF USE – DEVELOPMENT PERMIT FOR EXTRACTIVE INDUSTRY AND OPERATIONAL WORK – DEVELOPMENT PERMIT FOR VEGETATION CLEARING ON LAND LOCATED AT 294 HUME ROAD, KABRA, QLD 4702, PROPERLY DESCRIBED AS LOT 1 ON RP616642 AND LOT 44 ON SP140243

Groundwork Plus has been engaged by AMCOR Quarries & Concrete Pty Ltd to prepare and submit a development application for a Material Change of Use – Development Permit for Extractive Industry and Operational Work – Development Permit for Vegetation Clearing on land located at the abovementioned address.

The comprising application has been prepared in accordance with Chapter 3, Part 2, Division 51 of the *Planning Act 2016*, being the mandatory information required for a 'properly made application'.

The required information is as follows:

51(1)(a) - The application has been made using the approved forms to the Assessment Manager. Refer to the completed forms attached.

51(1)(b)(i) - The application is accompanied by documents required to be given.

51(1)(b)(ii) - The application fee has been confirmed by Council officers as $20,000.00. A copy of the application fee confirmation correspondence from Council has been included.

52(2) - Landowner consent has been provided with the application.

We have enclosed a Planning Assessment Report and associated attachments in support of the application. If you have any queries regarding this matter, please do not hesitate to contact me by telephone on (07) 3871 0411, or by email: slyons@groundwork.com.au. We look forward to receiving Council's acknowledgement of this application.

Yours faithfully
Groundwork Plus



Sam Lyons
Town Planner

GROUNDWORK plus

STANWELL QUARRY

PLANNING ASSESSMENT REPORT

Prepared for:
AMCOR Quarries & Concrete

Date:
August 2021

File Ref:
1662.DA1.310.001

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1.0 Introduction

1.1 Scope

Groundwork Plus has been commissioned by AMCOR Quarries & Concrete Pty Ltd ('AMCOR') to prepare and submit a development application to the Rockhampton Regional Council ('Council') for an extension to an existing extractive industry operation located at 294 Hume Road, Kabra QLD 4702, properly described as Lot 1 on RP616642 and part of Lot 44 on SP140243 (herein referred to as the 'site').

The development application comprises the following components:

(a) Material Change of Use – Development Permit for Extractive Industry;
(b) Material Change of Use – Concurrence Environmentally Relevant Activities ('ERAs');
(c) Environmental Authority for ERAs:
    - ERA 16(2)(b) Extracting, other than by dredging, the following quantity of material – more than 100,000 tonnes per annum ('tpa') but not more than 1,000,000tpa; and
    - ERA 16(3)(b) Screening, the following quantity of material – more than 100,000tpa but not more than 1,000,000tpa.
(d) Operational Work – Development Permit for Vegetation Clearing.

The proposed development is for an extension to the extraction area of the existing Stanwell Quarry only. No changes to the material haulage or general site operation are proposed. The operation currently has approval to extract and screen up to 1,000,000tpa.

This Planning Assessment Report ('report') examines the relevant provisions of the *Rockhampton Region Planning Scheme 2015* and the *State Development Assessment Provisions*. This report has been prepared to accompany the application to describe the proposed development, identify potential impacts, nominate environmental management measures to be implemented to manage any potential impacts and to assess the proposed development against applicable legislative requirements.

This report is intended to ensure that sufficient information is provided to Council, the State Assessment and Referral Agency ('SARA') and other interested parties, so as to reach an informed decision regarding the proposed development application.

1.2 Applicant

The applicant is AMCOR Quarries & Concrete Pty Ltd ('AMCOR') who are a local family owned company providing quality quarry materials and plant equipment hire services throughout Central Queensland.

1.3 Background

The Stanwell Quarry is a hard rock quarry producing up to 1,000,000tpa, servicing the Central Queensland region. AMCOR have recently acquired the quarry and are seeking to extend the approved extraction area. The Stanwell Quarry operates under an existing development permit issued by the Fitzroy Shire Council on 10 September 2002 (refer **Attachment 1 – 2002 Development Permit**) and an Environmental Authority ('EA') issued by the Department of Environmental and Science ('DES') (EA reference: EPPR00424513) (refer **Attachment 2 – Existing Environmental Authority**). The EA regulates the quarry for a number of Environmentally Relevant Activities ('ERAs') including:

- ERA 16(2)(b) – Extracting, other than by dredging, in a year, the following quantity of material – more than 100,000 tonnes but less than 1,000,000 tonnes; and
- ERA 16(3)(b) – Screening, in a year, the following quantity of material – more than 100,000 tonnes but less than 1,000,000 tonnes.

1.4 Pre-lodgement Discussions

A pre-lodgement meeting was held with Council officers on 18 February 2021 and meeting minutes were subsequently provided (refer **Attachment 3 – Council Pre-lodgement Meeting Minutes**). The primary discussion points that were raised during the pre-lodgement meeting were potential amenity impacts (noise, dust and vibration), traffic and biodiversity.

Pre-lodgement advice was also issued by SARA and the primary considerations identified by the State agencies were State Transport Infrastructure, vegetation clearing and impacts on Matters of State Environmental Significance (refer **Attachment 4 – SARA Pre-lodgement Advice**).

2.0 The Site

Address:	294 Hume Road, Kabra QLD 4702 (refer **Figure 1 – Aerial Photo and Cadastre**)

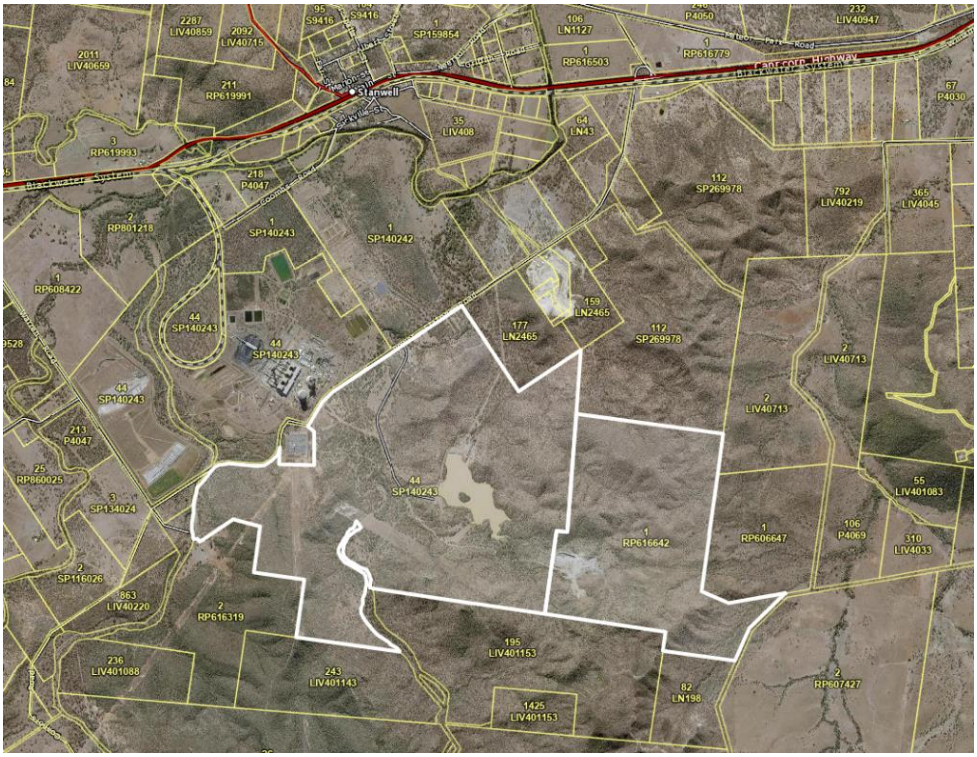


Figure 1 – Aerial Photo and Cadastre (source: QLD Globe)

Real Property Description:	Lot 1 on RP616642 – for extractive industry Part of Lot 44 on SP140243 – for access
Tenure:	Freehold
Landowner:	Lot 1 on RP616642 – Evan and Kim Acton Lot 44 on SP140243 – Stanwell Corporation Limited Refer **Attachment 5 – Title Searches**
Site Area:	1,440 hectares
Access:	Power Station Road via Lot 44 on SP140243
Existing Land Use:	Extractive Industry – Stanwell Quarry
Proposed Land Use:	Extractive Industry – extension to extraction area of existing Stanwell Quarry
Local Authority:	Rockhampton Regional Council
Planning Scheme:	*Rockhampton Region Planning Scheme 2015*

Zoning:	Rural Zone (refer **Figure 2 – Zone Plan**)

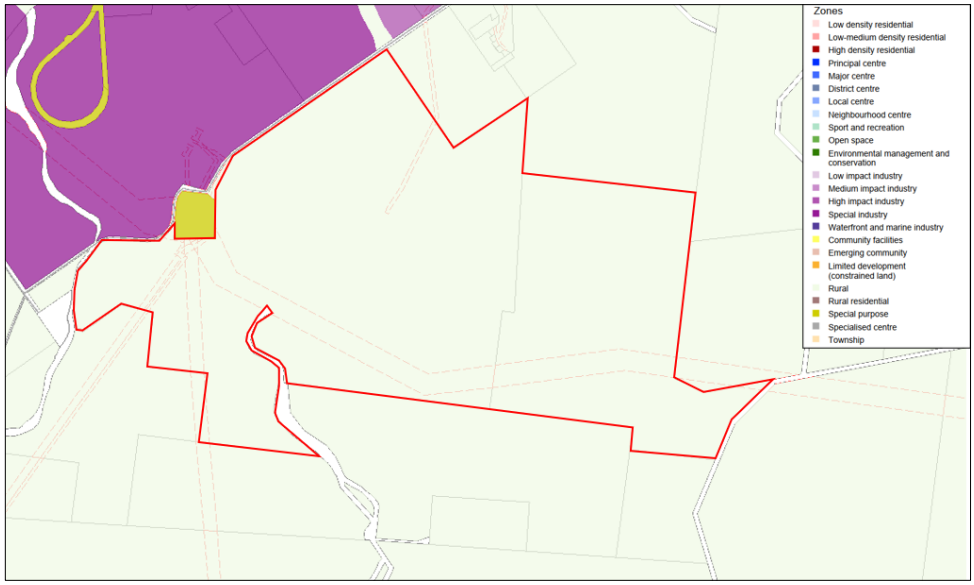


Figure 2 – Zone Plan (source: RRPS Maps)

Level of Assessment:	Impact Assessable
Site Overlays:	Biodiversity overlay Bushfire Hazard overlay Steep Land overlay Regional Infrastructure overlay Road Hierarchy overlay
Applicable Codes:	Rural Zone Code Extractive Industry Code Access, Parking and Transport Code Stormwater Management Code Waste Management Code Works Code Biodiversity Overlay Code Bushfire Hazard Overlay Code Steep Land Overlay Code

3.0 Description of Proposal

The proposed development seeks to utilise a proven hard rock resource by extending the extraction area of an existing extractive industry operation known as the Stanwell Quarry, located at 294 Hume Road, Kabra, properly described as Lot 1 on RP616642 (extractive industry operation) and part of Lot 44 on SP140243 (access to extractive industry operation). The proposed development is for an extension to the extraction area only, no changes to the material haulage or general operation of the quarry are proposed. The current 2002 Development Permit does not specify the extraction boundaries for the quarry operation. This application seeks to define the extent of the extraction boundary to provide clarity and certainty for the quarry operator and the regulators.

The existing quarry pit is located at the base of the southern face of the hill and it is proposed to expand development east from the existing pit whilst avoiding mapped watercourses and the electricity easement running through the site (refer **Attachment 6 – Proposal Plans**). The quarry will continue to be accessed via Power Station Road and material will be hauled for approximately 3.5 kilometres along Power Station Road before connecting to the Capricorn Highway (State controlled road). There are no sensitive land uses along this section of Power Station Road, with the land to the north-west being zoned Special and High Impact Industry and the land to the south-east being zoned Rural.

Quarry products are used in the building and construction industries and are essential components for providing housing and infrastructure projects. In Queensland, particularly during the past 25 years, annual production of quarries has increased in order to support the continued growth throughout the State. The quarry industry is market driven and is therefore focused on price, quality and service.

3.1 Quarry Design

The existing quarry pit area will be extended in an easterly direction into the western face of the hill. A mobile crushing and screening plant may be utilised within the extended quarry pit area, generally aligning with the progressive site workings. The existing fixed plant will remain in the western section of the operation and will continue to be used for the majority of material processing. Ancillary equipment will be utilised on site on an 'as needed' basis (e.g. sweepers, water trucks and fuel trucks). The existing site office, crib room, amenities and weighbridge will continue to be used as part of the proposed operation (refer **Attachment 6 – Proposal Plans**).

The quarry will continue to use standard quarrying methodologies that involve clearing, topsoil and overburden stripping, drilling and blasting, extraction, processing and stockpiling with the final products sold for use in the construction industry, refer to **Figure 3 – Conceptual On-site Extractive Operations**.

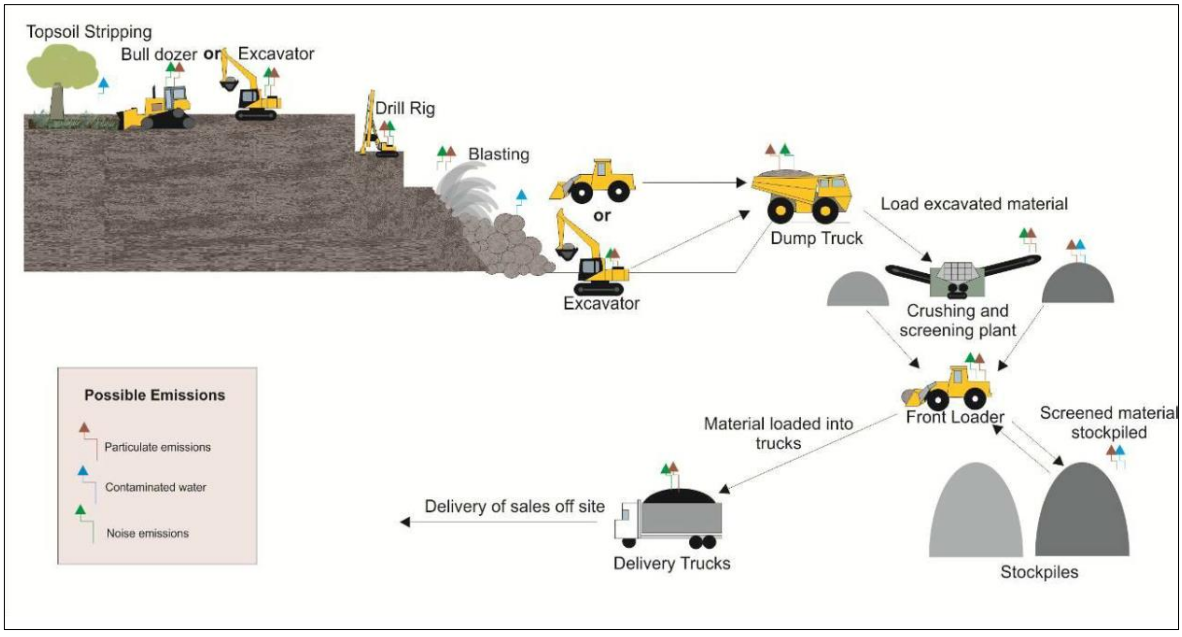


Figure 3 – Conceptual On-site Extractive Operations

The quarry operations are anticipated to comprise the following basic elements:

- Clearing of vegetation and stripping of topsoil and overburden via mechanical means (i.e. bulldozer or excavator). Stockpiling topsoil and overburden for future use as saleable general fill, incorporation into onsite rehabilitation works where required, or use in construction of stormwater controls (e.g. perimeter banks / bunds).
- Drilling and blasting the exposed underlying rock from the developed quarry benches to reduce the material into a manageable size for relocation of the materials to the quarry pit or bench below for processing.
- Transferring raw material to the crushing and screening plant/stockpile area using off-road haul truck(s) loaded by an excavator or front-end loader.
- Crushing and screening raw material using a mobile crushing and screening plant.
- Stockpiling the final products using a front-end loader and/or off-road haul truck before the material is sold and loaded into trucks for transportation off-site for use.
- Rehabilitating disturbed areas progressively once the terminal quarry benches have been established.

3.2 Development Justification and Need

Quarried products are used in the building and construction industries and are essential components for providing shelter and infrastructure. In Queensland, the trend for annual production of quarried products to increase. The quarry industry was market driven and therefore is focused on price, quality and service. The trend over the past two decades has been for annual production to increase at operating quarries. The industry is dominated by a few large, national, vertically integrated companies. However, independent operators provide market choice and special services and contribute to a vital and vigorous industry.

Extractive industries are a significant contributor to the material needs of local and regional communities and to economic activity and development. Extractive resources are site specific, limited in occurrence by geological conditions and are finite. Because they are high-volume, low-cost materials, they need to be located close to the communities that use them as the cost of transport to the end user contributes greatly to the overall cost of the delivered product. Extraction resources underpin all urban and infrastructure development and made a major contribution to the ongoing to the ongoing economic growth of Queensland through direct and indirect employment opportunities.

Consequently, the identification, protection and utilisation of extractive resources is an important consideration when land use planning decision are made. Quarried products are required in every major infrastructure and urban development project. Cement Concrete and Aggregates Australia ('CCAA'), the peak body for the heavy construction industry materials industry note that:

- Next to water, concrete (which generally comprises 80% gravel and sand; 10% cement and 10% water) is the most consumed substance on the planet;
- Each kilometre of a typica new 2 lane asphalt highway needs about 14,000 tonnes of crushed rock, or about 400 truckloads of material;
- An average new house constructed needs about 110 tonnes of crushed rock, sand and cement in 53m^2 of concrete;
- It is estimated that each Queenslander requires about 10 tonnes of crushed per annum of quarry material to support the building of roads, houses and other infrastructure to service his or her needs.

Quarry market areas are dynamic and depend on integrated investments, product characteristics, competition and many other factors. In simplistic terms, the market area for the quarry can be viewed as consisting two main segments: road base market and aggregates market. Road bases have traditionally been cheaper than aggregates and quality requirements vary. Hence the cost of transport of road bases is more significant and the market area for a particular quarry is more restricted than for high quality or specialist aggregates. The principal market area for the Stanwell Quarry encompasses the Rockhampton Regional Council local government area but also extends to include other parts of Central Queensland, including the following Local Authorities:

- Livingstone Shire Council
- Gladstone Regional Council
- Banana Shire Council
- Central Highlands Regional Council

3.3 Hours of Operation

The hours of operation will remain unchanged at 6:00am to 6:00pm Monday to Saturday with no operations on Sundays or public holidays.

Blasting will be limited to 9:00am to 3:00pm Monday to Friday, and 9:00am to 1:00pm on Saturdays.

3.4 Plant and Equipment

The number of plant and equipment deployed on-site is anticipated to vary from time-to-time to service the project demands. Types of major plant and equipment deployed on-site may include, but not limited to:

- Bulldozer;
- Grader;
- Excavator;
- Off-road haul trucks;
- Front-end loader;
- Fixed crushing and screening plant;
- Mobile crushing and screening plant; and
- Haul road trucks.

Machinery repairs and maintenance will be carried out on-site where practicable within a designated workshop area. Stationary equipment will generally be serviced in the field unless it is practical for the parts to be dismantled and transported to the workshop. Consumables (e.g. tyres, oils and greases) will be supplied by contractors and removed (including associated packaging) for disposal off-site in accordance with the requirements of the prevailing legislation and the local authority on a regular basis.

3.5 Employees

No changes to the existing number of employees on site is proposed. The Stanwell Quarry employs 10 to 20 staff depending on market circumstances and demand with additional contractors frequenting the site.

4.0 Assessment of Potential Environmental Impacts

This section provides a review of the potential impacts associated with the proposed extension to the existing extractive industry operation on the surrounding sensitive receivers. The site is operated in accordance with a Site Based Management Plan ('SBMP') which outlines the controls and measures that will be employed on site to ensure that potential environmental impacts are managed to the required standards (refer **Attachment 7 – Site Based Management Plan**). The SBMP will be the principal management tool for guiding environmental management on the site by providing a framework at the operational level to prevent, or suitably manage environmental impacts.

4.1 Noise and Dust

Quarry operations involve the use of machinery and activities that have the potential to generate noise and dust which may include, but is not limited to, the following:

- Use of machinery and heavy vehicles;
- On-site maintenance work;
- Truck movement on-site for transferring raw material;
- Loading, unloading and handling of raw material;
- Movement of raw material on conveyors;
- Exhaust emissions from vehicles and mobile equipment.

The nearest sensitive receivers are located approximately 3.5 kilometres north-east of the proposed extension area. In order to minimise the potential for impacts to these sensitive receivers, operational measures will be implemented to manage and reduce the potential for noise and dust emissions. These measures are outlined in the Air Quality Management Plan (section 4.1 of the SBMP) and the Noise Management Plan (section 4.4 of the SBMP) and include the following:

- Operate well maintained plant, vehicles and equipment, and ensure all plant, vehicles and equipment are serviced in accordance with, or more frequently than manufacturer's specifications;
- Avoid unnecessary revving of engines;
- Shut down equipment when not in use;
- Ensure that equipment is used for intended purpose;
- Maintain haul roads and hardstand surfaces in good condition and suitable grades (e.g. free of potholes, rills and product spillages);
- Limit high dust generating activities (e.g. removal of topsoil/overburden and blasting) to periods of favourable weather conditions;
- Enforce a maximum speed of 40 km/hr on internal roads;
- Engage a water truck/cart to dampen down roads, stockpiles, working areas and processing plant as required.

The proposed operation will be required to comply with the conditions of the existing EA which limit noise and dust emissions external to the site in accordance with the model operating condition for Extractive Industry operations. With the separation distance and implementation of Air Quality Management Plan and Noise Management Plan, identified in the SBMP, it is not anticipated that the proposed development will result in adverse noise or dust impacts to nearby sensitive receivers.

4.2 Blasting and Vibration

Blasting is used to fragment rock and this activity can result in ground vibration and airblast overpressure which may cause annoyance and alarm to neighbours or, in extreme situations, cause damage to property, structures and services. Blasting and explosives technology and practices have advanced rapidly in recent years. Ground vibration at quarry sites can be caused by crushing and screening operations, vehicle and mobile machinery movements and drilling and blasting activities. With the exception of blasting, ground vibration from these sources is limited and localised and extremely unlikely to cause annoyance external to the quarry area on site.

AMCOR are committed to continuing to apply modern blasting technology to the operation of the Stanwell Quarry. Experienced and licensed organisations will be contracted to provide blasting services on site. Various operations are available for controlling vibration and airblast overpressure from blasting activities. Application of best practice technology to

operating practice can be particularly effective in maintain ground vibration and airblast overpressure levels to within generally acceptable environmental criteria. Various options are available for controlling vibration and airblast overpressure from blasting activities.

A Blasting Management Plan has been prepared for the operation as part of the SBMP (refer section 4.5 of the SBMP) (refer **Attachment 7 – Site Based Management Plan**). The Blast Management Plan provides control measures which may be implemented to assist in mitigating any potential impacts to sensitive receivers. The control measures include:

- Only suitably experienced and qualified blasting personnel shall be employed or contracted to provide blasting services;
- Blasting must be carried out in accordance with the current edition of the administering authority's *Guideline: Noise and vibration from blasting* (EHP 2016) and with *AS 2187.2 Explosives – Storage and use – Use of explosives* (Standards Australia 2006);
- Unless prior approval is obtained from the administering authority; blasting is only permitted during the hours of:
    - 9am to 3pm Monday to Friday.
    - 9am to 1pm on Saturdays.
    - Blasting is not permitted at any time on Sundays or public holidays;
- Handling, transport and use of explosives shall be carried our in accordance with the requirements of *AS 2187.2 Explosives – Storage and use – Use of explosives* (Standards Australia 2006), and the *Mining and Quarrying Safety and Health Act 1999* (MQSH Act) and associated Regulation;
- A blast plan shall be prepared for each blast, containing blast hole layout, initiation sequence, charging, stemming type and heights, charge weight and any other design element, required to inform good blasting practice;
- Blast areas may be dampened down prior to blasting to minimise dispersion od fry and fine materials where practicable, or where it is identified as a source of potential dust nuisance.

Blasting limits for the Stanwell Quarry are currently regulated by conditions 2N1, 2N2, 2N3 and 2N4 of the EA (refer **Attachment 2 – Existing Environmental Authority**). The EA will continue to regulate the blasting activities for the operation of the quarry.

4.3 Bushfire

The location of the proposed extraction area extension is mapped within the very high bushfire hazard classification. Quarries by their nature are well equipped to assist and/or deal with bushfire events. The use of heavy earthmoving machinery and water trucks used in the quarry operation can be called upon to assist in the event of a bushfire. Nevertheless, the following bushfire management measures will be implemented on site to reduce the potential bushfire hazard for the operation and to ensure the safety of on-site employees and the protection of plant and equipment.

Strategies/mitigation measures for the management of bushfire hazards on site will include the following:

- Preparation of an evacuation plan;
- Providing details of the available water sources for fire-fighting purposes;
- Keeping the operational areas tidy and not storing any material around the edges of the operations area that would increase the risks from bushfire;
- Maintaining site attendance register;
- Maintaining a communications system with all on-site personnel;
- Ensuring availability of heavy earthmoving machinery and water trucks used in the quarry operations to assist in the event of major bushfires;

The site manager will regularly review and update the site evacuation plan and ensure regular surveillance of the site to ensure access roads, fire trails and the operational areas are all suitably maintained.

4.4 Water Storages, Stormwater and Erosion Control

Water requirements for the Stanwell Quarry are currently regulated by conditions 1WT1, 1WT2, 1WT3 and 1WT4 of the EA (refer **Attachment 2 – Existing Environmental Authority**). The conditions of the EA will continue to regulate the management of water on the site as part of the quarry operation.

Water management has been identified as a primary consideration for the proposed development and a Water Quality Management Plan has been prepared for the site and included as Section 4.2 of the SBMP (refer **Attachment 7 – Site Based Management Plan**). The objective of the Water Quality Management Plan is to ensure that water resources are utilised efficiently on the site as part of the quarry operation and the quality of water leaving the site does not impact on the environmental values downstream of the Stanwell Quarry. The performance targets for water management on the site are:

1. Stormwater contaminated by the activity must be managed to minimise or prevent any adverse impacts on the values of the receiving environment.
2. Erosion and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.
3. The stormwater runoff from disturbed areas, generated by (up to and including) a 24 hour storm event with an average recurrence interval of 1 in 5 years must be retained on site or managed to remove contaminants before release.
4. The release to waters must not:
    - have any other properties at a concentration that is capable of causing environmental harm; or
    - produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other visually objectionable matter.
5. An uncontrolled release from site should only occur under exceptional circumstances such as the site receiving a rainfall event larger than a 24-hour storm event with an ARI of 1 in 5 years.
6. Settled / treated Stormwater that is controlled released from the site is to minimise or precent any adverse impacts on the receiving environment.

4.5 Rehabilitation

Rehabilitation is an essential component of quarry planning and development. Good planning prior to the commencement of quarrying greatly assists in the management of environmental impacts and provides for efficient operations. Landscaping and rehabilitation will continue to be incorporated into the day to day operations of the quarry to assist in minimising rehabilitation costs and impacts on the environment whilst ensuring post extraction land use objectives are achieved. A Rehabilitation Management Plan has been prepared for the Stanwell Quarry and is included as section 4.8 of the SBMP (refer **Attachment 7 – Site Based Management Plan**).

The principal objectives for rehabilitation of the site will be:

- To reduce the potential for erosion;
- To ensure a safe and stable landform;
- To ensure a sustainable post extraction land use which is likely to be rural uses.

Rehabilitation will be progressive and responsive to changing technologies and needs over the life of the quarry. The program for implementing rehabilitation works will primarily depend on the rate at which terminal batters/benches are reached. Rehabilitation will be integrated with the ongoing extractive operations so that drainage, soil management, earthmoving, sediment control and landscaping and revegetation works are undertaken with rehabilitation objectives in mind. Rehabilitation requirements for the site are currently regulated by conditions 1L2 and 1L3 of the EA.

4.6 Site Access and Traffic

The quarry operation will continue to gain access through part of Lot 44 on RP616642 via Power Station Road. Material will be hauled along Power Station Road for approximately 3.5 kilometres before connecting to the Capricorn Highway (State controlled road). The proposed development is for an extension to the extraction area only. As such, no changes to the current access arrangements are proposed as part of this application.

It should be noted that the existing approvals allow the quarry to operate at up to 1,000,000tpa. However, it is acknowledged that the historic average production rate is approximately 250,000tpa.

A Traffic Impact Assessment ('TIA') has been prepared by McMurtrie Consulting Engineers to determine the potential impacts of the proposal on the operation and safety of the surrounding road network and the potential impacts to the existing pavement on Power Station Road (refer **Attachment 8 – Traffic Impact Assessment**).

For the purpose of the TIA, the following has been adopted:

1. Existing historical production of 250,000tpa;
2. Proposed maximum extraction production of 444,000tpa;
3. That is an increase of 194,000tpa.

Based on the low background traffic volumes along Power Station Road, it is anticipated that the quarry will have a minimal impact on the mid-block section of Power Station Road, with adequate capacity expected to be available to cater for the additional heavy vehicles. Given that the proposal will only impact on the through movements at each intersection along Power Station Road, the impact of the proposed haulage on the operation (including vehicle delay) of the relevant intersections on the local road network can be deemed to be negligible.

It has been determined that the Power Station Road / Stanwell Quarry access can cater for the wheel paths of the haulage vehicle movements, with no widening required along Power Station Road or at each intersection along its haulage route, including the Capricorn Highway / Power Station Road intersection to accommodate the proposed operation.

An assessment of the expected pavement impacts to the relevant sections of Power Station Road was undertaken. This assessment identified that the heavy vehicle movements associated with the proposal are expected to lead to increases in pavement loadings on the identified sections of Power Station Road above the recommended 5% impact trigger. As such pavement impact contribution calculations were undertaken using the standard DTMR Fitzroy District spreadsheet methodology.

The TIA concluded that with a suitable/alternative road contribution to offset the expected increased maintenance and rehabilitation requirements, the additional traffic generated by quarry operation will have a minor impact on the adjacent road network.

4.7 Ecology

Extractive resources are formed as a result of fortuitous geological events and therefore occur in fixed and limited locations. The proposed extraction area follows geological mapping and the direction of the existing quarry footprint. A level of flexibility is required regarding the size of the extraction area to accommodate selective extraction. Given the nature and distribution of the resource on the site, it is not possible to avoid the mapped areas of environmental significance as this would remove access to a significant portion of the extractive resource which is covered by local and State government mapping. It is proposed to minimise potential impacts by clearing only where in line with operational needs. Areas will also be progressively rehabilitated once material is exhausted within the area and the landform will be revegetated and returned to a safe and stable land form suitable for post extraction land uses which are likely to be rural uses including cattle grazing.

An ecological assessment of the site and proposed operations area has been undertaken by Saunders Havill Group ('SHG') (refer **Attachment 9 – Ecological Assessment Report**). The purpose of the assessment was to identify the ecological values within the area for the proposed quarry operation and determine the potential impacts to those values as a result of the proposed development. SHG's reporting was informed by a field survey conducted from 17 November 2020 to 23 November 2020.

The field survey confirmed that the project area contains relatively uniform vegetation characteristics including a mix of flora species typically found within a rural setting a total of ninety-nine (99) flora species were recorded within the application area. Of these species, sixty-eight (68) were native and thirty-one (31) were introduced or planted species. Five (5) species are listed as restricted invasive plants under the *Biodiversity Act 2014* and will require specific levels of management.

The proposed impact area is mostly mapped as remnant vegetation (Category B) listed as 'Least Concern'. The mapped 'Least Concern' remnant vegetation is also classified as essential habitat for *Cycas megacarpa.* During the field survey, two

(2) specimens of *Cycas megacarpa* were recorded adjacent to the site, outside of the site boundary and associated 100 metre buffer. No specimens were found in the proposed quarry operation area, or within the site boundary.

The ecological assessment undertaken by SHG did not identify any unique or significant biodiversity values within the proposed quarry operation area and as such, the impact to vegetation is considered to be minimal.

A full fauna assessment was conducted by SHG during the field survey, employing standardised fauna survey site methodology in addition to several specialised survey techniques targeting specific fauna species. The following survey techniques were employed:

- Standardised fauna survey sites – Installation of a pitfall trap array in the centre of each 1 ha site involved excavating a shallow trench and installing fencing into the ground in a T-shape. Four 20L buckets were installed flush to the ground, with the fencing acting to direct fauna into the buckets. Three pairs of funnel traps were set against the fencing between buckets to capture additional fauna. Twenty Elliott box traps were placed in two parallel lines of ten along the length of the 1ha site.
- Diurnal active and targeted searches – active searching during daylight hours involving thorough searching within potential microhabitat such as under tree bark, within loose leaf litter, under rocks and fallen timber, within partially decomposed tree stags and in tree foliage.
- Spotlight surveys – High-powered spotlights (Fenix HP25R Rechargeable LED Headlamp – 1000 lumens) were used to detect cryptic and nocturnal fauna.
- Anabat sites – A bat echolocator device (Anabat Swift) was installed at five locations across the site for a single night each
- Camera sites – Remote-triggered camera traps were installed in locations targeted at threatened species and cryptic fauna.
- Observational survey – The assessment area was walked several times to gauge the potential for ideal habitat for threatened species identified as possible inhabitants of the site. Specific habitat attributes, which may support these threatened species, were also recorded when observed.

Fauna recorded across the site included small reptiles, mammals and avifauna, some which are likely to utilise the site as part of a broader home range. With the exception of the power easement and quarry footprint, vegetation surrounding the site is well connected to the broader landscape allowing opportunity for fauna movement throughout the area. Stanwell Conservation area is present to the west of the site which likely provides significant habitat value and includes a large dam. All species detected are considered common in a local or regional context with no species listed as Threatened under state or federal legislation definitively recorded on site.

SHG completed detailed site surveys to ground-truth potential ecological values within the proposed extraction area. SHG stated the following in relation to MSES at the site:

> *'The action proposes to remove vegetation which is currently mapped as MSES Wildlife Habitat and VM Essential Habitat for the flora species, Cycas megacarpa (Figure 3). Additionally, this area of mapped MSES is also mapped as a high-risk trigger area under the NC Act, requiring assessment across the site adhering to the Flora Survey Guidelines – Protected Plants. These surveys were completed on 17th November 2020 by a suitably qualified person (see Appendix A) with details reported within a Protected Plant species report for the site. No specimens of Cycas megacarpa were detected onsite during comprehensive surveys, allowing for an exemption to be applied for under the NC Act. The fulfillment of these survey requirements, with no specimens detected onsite, suggests the clearing of this vegetation will avoid impacting on this particular Matter of State Environmental Significance (MSES)'* (reference taken from **Attachment 12**).

As such, impacts to MSES are understood to be not applicable to the development within the proposed extraction area.

The proposed extraction area is adjacent to a MSES regulated vegetation (defined watercourse), which is categorised as a Stream Order 1 watercourse for the purpose of the *Vegetation Management Act 1999*, and therefore the defining distance is 10 m (DNRME 2020). The proposed extraction area has been situated to create a 20 m to 50 m buffer to this watercourse north of the proposed extraction area.

SHG concluded the following generally in relation to ecological values at the site:

'The current EA (EPPR00424513) is held across the entire Lot however, clearing is proposed for a minimal amount of this area. Presently, Lot 1 on RP616642 is predominantly mapped as remnant or regrowth vegetation with the exception of two small polygons of Category X non-remnant vegetation, one of which is included within the proposed clearing area (see Figure 3). In addition, the proposed clearing adjoins an easement parcel, which has been previously cleared and has the potential to be cleared at any time.

Access roads to the site currently exist, with the clearing proposing to extend a pre-existing extraction area. Locating the proposed action in this area minimises the need to clear additional areas for new access roads. Clearing within the proposed polygon maintains extensive remnant and mature regrowth vegetation to the north of the impact site, within 1RP616642, which continues to facilitate habitat connectivity east-west towards the conservation reserves as well as north-south through the site.

….Due to the extensive surveys being conducted onsite in accordance with the Queensland Flora Survey Guidelines - Protected Plants, failing to detect the species in addition to assessment of significant residual impacts to C. megacarpa (for which essential habitat is mapped), a significant residual impact is not expected to occur due to the proposed action' (reference taken from **Attachment 12**).

As such, impacts to ecological values within areas mapped as MLES – General are understood to be avoided for the proposed development within the proposed extraction area.

The ecological assessment undertaken by SHG determined that the proposed development is unlikely to have a significant residual impact on any matters of local, State or national environmental significance and therefore, no environmental offsets should be required.

5.0 Planning Framework

5.1 Statutory Planning Process

5.1.1 Planning Act 2016

Under the *Planning Act 2016* ('Planning Act'), 'development' is defined as any of the following:

(a) carrying out–
(i) building work; or
(ii) plumbing or drainage work; or
(iii) ***operational work****; or*
(b) reconfiguring a lot; or
(c) ***making a material change of use of premises****.*

Material change of use, or premises, means:

any of the following that a regulation under section 283(2)(a) does not prescribe to be a minor change of use–
(a) the start of a new use of the premises;
(b) the re-establishment on the premises of a use that has been abandoned;
(c) ***a material increase in the intensity or scale of the use of the premises****.*

The proposed falls within the definition of 'development' as defined under the Planning Act, and therefore constitutes a material change to the existing use of the land and operation work for vegetation clearing.

5.1.1.1 Assessment Process

Under the Planning Act, the *Development Assessment Rules* ('DA Rules') set out the development assessment process for applications. The process is illustrated by **Figure 4 – Development Assessment Process** below.

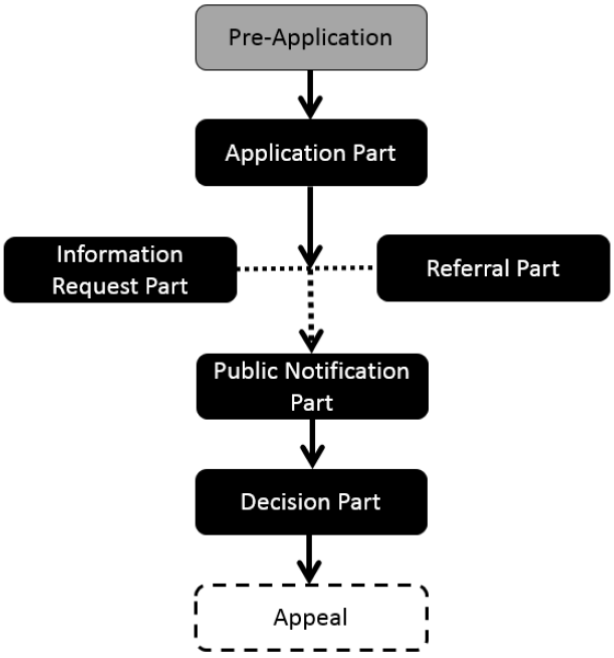


Figure 4 – Development Assessment Process

5.1.1.2 Referral Agencies

If there is a requirement under the *Planning Regulation 2017* ('Planning Reg') for an entity other than the assessment manager to have input in the assessment of a development application, the application is referred to SARA as the referral agency. Schedule 10 of the Planning Reg sets out the referral agencies and their jurisdictions.

This application triggers referral to SARA within the Department of State Development, Manufacturing, Infrastructure and Planning as a referral agency.

Table 1 – Referral Triggers and State Development Assessment Provisions shows the matters of State interest which are triggered by the proposed development, and the related State Development Assessment Provisions ('SDAP') for assessment.

Table 1 – Referral Triggers and State Development Assessment Provisions

Matters of Interest	Development Type	Relevant Planning Reg Provision	Relevant SDAP
Native Vegetation Clearing	Operational Work	Schedule 10, Part 3, Division 3, Table 1	**State Code 16**: Native Vegetation Clearing
Environmentally Relevant Activities	Material Change of Use	Schedule 10, Part 5, Division 4, Table 2	**State Code 22**: Environmentally Relevant Activities
State Transport Infrastructure (thresholds)	Various aspects of development	Schedule 10, Part 9, Division 4, Subdivision 1, Table 1	**State Code 6**: Protection of State Transport Networks

The proposed development triggers assessment against the SDAP relating to native vegetation clearing, ERAs and State transport infrastructure. An assessment against the relevant SDAP code provisions has been provided in **Attachment 10 – SDAP Code Assessment**. SHG have prepared a response to State Code 16: Native Vegetation Clearing (refer **Attachment 11 – State Code 16 Response**) and part of State Code 22: Environmentally Relevant Activities (refer **Attachment 12 – State Code 22 Response**).

5.1.2 Environmental Protection Act 1994

The *Environmental Protection Act 1994* ('EP Act') regulates the assessment process for EAs relating to ERAs. In accordance with the *Environmental Protection Regulation 2008* ('EP reg'), the re-assessment of the existing ERAs to be carried out on the site are identified in **Table 2** below:

Table 2 – Relevant Environmentally Relevant Activities and Thresholds

ERA and Threshold	AES	Annual Fee	ERA Type
ERA 16. Extractive and Screening Activities			
2(b) – extracting, other than by dredging, in a year, the following quantity of material – more than 100,000 tonnes, but less than 1,000,000 tonnes	39	$10,998.00	Concurrence
3(b) – screening, in a year, the following quantity of material – more than 100,000 tonnes, but less than 1,000,000 tonnes	29	$3,666.00	Prescribed

Pursuant to Section 115 of the EP Act, this application is also for an amendment to the site's existing EA and is coordinated in the development assessment process (refer **Attachment 2 – Existing Environmental Authority**). In accordance with Section 125 of the EP Act, this request includes the following mandatory requirements for making an application for an amended EA:

125(1)(a) This application will be made to the administering authority.

125(1)(b) The application has been made using the approved forms being the DA approved forms.

125(1)(c) The application describes all ERAs for the existing operation, including the proposed additional aspects (refer **Table 2 – Relevant Environmentally Relevant Activities and Thresholds**).

125(1)(d) The application describes the land on which the activities will be carried out.

125(1)(e) The application for an EA amendment will be accompanied with the appropriate fee on referral of the application to SARA.

125(1)(f) The application has only one applicant.

125(1)(g) The application is a Site-Specific Application.

125(1)(h) The applicant is a Registered Suitable Operator.

125(1)(i) This application is for a Development Permit for a Material Change of Use for Extractive Industry.

125(1)(j) The application is not a Standard Application.

125(1)(k) The application is not a Variation Application.

125(1)(l) The application is a Site-specific application.

(i) An Environmental Assessment Report ('EAR') has been prepared to accompany this application and includes an impact assessment of each relevant activity on the environmental values of the site (refer **Attachment 13 – Environmental Assessment Report**), including:

(A) A description of the environmental values likely to be affected by each relevant activity;
(B) Details of any emissions or releases likely to be affected by each relevant activity;
(C) A description of the risk and likely magnitude of impacts on the environmental values;
(D) Details of the management practices proposed to be implemented to prevent or minimise adverse impacts;
(E) Details of how the land subject to the application will be rehabilitated after each relevant activity ceases.

(ii) A description of the proposed measures for minimising and managing waste generated by each relevant activity has been addressed.

(iii) The site is not subject to any Site Management Plan (associated with Part 8 – Contaminated Land of the EP Act).

125(1)(m) The application is for a prescribed ERA (and a concurrence ERA). However, the applicant will need to nominate a specific day for the environmental authority to take effect, which will be upon commencement of the development approval (i.e. once the extractive activities commence in the proposed extension area).

125(1)(n) The application includes all relevant documents relating to the application prescribed under the EP Reg. An EAR (refer **Attachment 13 – Environmental Assessment Report**) has been prepared, which addresses the following:

- Schedule 5, Part 3, Table 1 of the EP Reg outlines the environmental objective and performance outcomes for an Operational Assessment, which is a requirement pursuant to Section 51 of the EP Reg to assist the Administering Authority with their decision.

- Schedule 5, Part 3, Table 2 of the EP Reg outlines the environmental objective and performance outcomes for a Land Use Assessment which is required to be assessed against the proposed development pursuant to Schedule 7, Table 2, Item 1 of the EP Reg.

5.1.3 Vegetation Management Act

The *Vegetation Management Act 1999* ('VM Act'), in conjunction with other State legislation, regulates the clearing of vegetation in Queensland. Under the VM Act, a series of maps delineate vegetation features across the landscape, which are each assigned a conservation value directly related to the remaining extent of these features in the landscape. The VM Act also protects 'essential habitat' vegetation where listed threatened species have been known to occur.

Extractive industry uses are identified under Section 22A of the VM Act as a 'relevant purpose'. On 25 June 2021, the Department of Resources confirmed that the proposed extractive industry use is a relevant purpose under Section 22A of the VM Act and an application for vegetation clearing can be made (refer **Attachment 14 – Relevant Purpose Determination**).

The current quarry foot print and associated cleared areas of the Stanwell Quarry are mapped as remnant vegetation on the Regulated Vegetation Management Map. The site is mapped as containing remnant vegetation which has Category B 'Least Concern' regional ecosystem status (RE11.11.15/11.11.3/11.11.5). The remnant vegetation of 'Least Concern' status within the proposed quarry operations area has additional conditions applied to them under the VM Act, as this area is also mapped as 'essential habitat' for *Cycas megacarpa*. The ecological assessment undertaken by SHG found two (2) specimens of *Cycas megacarpa* identified outside of the proposed quarry operations and associated 100m buffer for the site (refer **Attachment 13 – Ecological Assessment Report**). An action proposing to clear native vegetation mapped as remnant under the VM Act must be referred to SARA and is required to be assessed against State Code 16 (refer **Attachment 11 – State Code 16 Response**).

Despite Category B vegetation being mapped across the majority of the proposed impact site, on-ground surveys confirmed this mapping as incorrect, with historical clearing and the operational quarry site currently mapped as remnant vegetation. The proposed extraction site has been located partly within non-remnant vegetation, and within vegetation mapped as remnant, adjoining current extractive and transport operations. The proposed development has a total impact area of 25.6 hectares. Detailed ecological surveys undertaken by SHG identified approximately 14 hectares of this impact area meets the minimum requirements for remnant status for both regional ecosystem communities. The remaining mapped area would fail to meet remnant status based on both height and canopy density of the open forest and woodland vegetation community.

The ecological assessment undertaken by SHG determined that the proposed development is unlikely to have a significant residual impact on any matters of local, State or national environmental significance and therefore, no environmental offsets should be required.

5.1.4 Nature Conservation Act 1992

The *Nature Conservation Act 1992* ('NC Act') classifies and protects significant areas (Protected Areas) and protects threatened plant and animal species. The site is mapped as occurring within the 'high risk area' on the Protected Plants Flora Survey Triger map. High risk area represents areas where endangered, vulnerable or near threatened plants under the NC Act are known to exist or, are likely to exist. The quarry extension clearing extent is areas mapped as 'High Risk' under the NC Act, including revised a 100 m buffer, which triggers the requirements for protected plant surveys to be completed prior to any clearing work.

A survey was undertaken by SHG across the clearing impact area to ascertain if any protected plants were present and consequently potentially impacted by the expansion works. A total of ninety-nine (99) flora species were identified throughout the survey period. None of the species recorded are currently listed as endangered, vulnerable or near threatened under the NC Act. As such, it was determined that a clearing permit under the NC Act is not required (refer **Attachment 15 – Flora Survey Report**).

5.1.5 Water Act 2000

The *Water Act 2000* ('Water Act'), in conjunction with other State legislation, regulates the taking and interfering with water in Queensland. Pursuant to Section 26 of the Water Act, *"All rights to the use, flow and control of all water in Queensland are vested in the State"*. Therefore, any water is a 'State Resource'.

Part 3 of the Water Act outlines how the State Authorises taking or interfering with water. Pursuant to Section 94, the general authorisations to interfere with water allow (**emphasis added**):

> ***94 General authorisations to interfere with water***
> *Any person may do any of the following–*
> *(a) **interfere with overland flow water**;*
> *(b) interfere with water from a watercourse, lake or spring by impoundment for structures used by the State or the Commonwealth to collect monitoring data.*

As this application is for an Extractive Industry operation, the authorisations in Section 97 of the Water Act are also applicable (**emphasis added**).

> ***97 Environmental Authorities***
> *(1) A person **may take overland flow water that is not more than the volume necessary to satisfy the requirements of**–*
> *(a) An **environmental authority**; or*
> *(b) A development permit carrying out an environmentally relevant activity, other than a mining or petroleum activity, under the Environmental Protection Act 1994, schedule 4.*
> *(2) A person **may interfere with the flow of water by impoundment if the interference is not more than is necessary to satisfy the requirements of an environmental authority**.*
> *(3) However, subsections (1) and (2) apply only if–*
> *(a) **The impacts of the take or interference were assessed as part of a grant of an environmental authority or development permit**; and*
> *(b) The environmental authority or development permit was granted with a condition about the take or interference with water.*

Typical of most extractive industry operations, the quarry footprint will be encompassed by a perimeter bund. Overland flow that falls within the quarry footprint will be collected, treated and re-used on site.

5.1.6 Aboriginal Cultural Heritage Act 2003

The *Aboriginal Cultural Heritage Act 2003* ('ACH Act') provides for the recognition, protection and conservation of Aboriginal cultural heritage. Due to the disturbed nature of the landscape, the potential for unidentified Aboriginal cultural heritage is anticipated to be low. Nevertheless, the landowner and operator have a duty of care under the ACH Act to ensure no Aboriginal cultural heritage is disturbed during site operations.

5.1.7 State Planning Policy 2017

The *State Planning Policy 2017* ('SPP') sets out the State planning interests for responsible land use planning and development across Queensland. Councils are required to consider the State interests that apply to their particular areas when preparing and implementing the planning scheme.

The *Rockhampton Region Planning Scheme 2015* reflect a superseded version of the State Planning Policy. Therefore, a separate assessment of the SPP has been provided in **Table 2 – State Planning Policy: Assessment Benchmarks**.

Table 3 – State Planning Policy: Assessment Benchmarks

State Interest	Applicable (yes / no)	Discussion
Liveable Communities	No	The site is not in an urban area, not does it propose an activity which will be accessed via common private title.
Mining and Extractive Resources	No	The site is not mapped within the listed areas.
Water Quality	No	The site is not mapped within the listed areas.
Natural Hazards, Risk and Resilience	Yes	The site is mapped as containing Bushfire Hazard Area (Very High, High and Medium potential bushfire intensity). The proposed extension area is mapped as medium and high potential bushfire intensity. Appropriate management and mitigation measures will be implemented on site to ensure the risks from bushfire hazard are minimised.
Strategic Airport and Aviation Facilities	No	The site is not mapped within the listed areas.

5.2 Rockhampton Region Planning Scheme 2015

The site is located within the Rockhampton Regional Council local government area and is regulated by the *Rockhampton Region Planning Scheme 2015* ('Planning Scheme'). The Planning Scheme provides a framework for managing and assessing development under the Planning Act. The Planning Scheme divides the area into zones, sets objectives for development in each zone, and manages development in accordance with criteria, developed to satisfy the objectives.

5.2.1 Use Definition

Schedule 1 of the Planning Scheme defines uses and administrative definitions. Extractive Industry is defined as follows:

> ***Extractive Industry***
> *Extractive industry means the use of premises for–*
> *(a) Extracting or processing extractive resources; and*
> *(b) Any related activities, including for example, transporting the resources to market.*

5.2.2 Level of Assessment

The Planning Scheme comprises assessment tables which identify the level of assessment for development in each zone. Assessment tables distinguish between exempt, self-assessable and impact assessable development. Table 5.4.6.4 identifies that a Material Change of Use for Extractive Industry in the Rural Zone is listed as **Impact Assessable** development and subject to public notification.

5.2.3 Zoning

The Planning Scheme divides the region into various areas based on the key land uses and desired environmental outcomes. The site is located within the Rural Zone (refer **Figure 2 – Zone Plan**). Extractive Industry is identified as suitable land use in the purpose of the Rural Zone:

> ***6.7.4.2 Purpose***
> *(1) The purpose of the rural zone code is to:*
> *(a) ensure that land with productive capacity is maintained for a range of existing and emerging rural uses that are significant to the economy of the planning scheme area;*
> *(b) **recognise that different types of rural land are suited to specific uses such as** animal industries, horticulture, cropping, intensive animal industries, intensive grazing and **extractive industries**;*
> *(c) …*

5.2.4 Applicable Codes

The Planning Scheme contains specific zone codes, overlay codes and development codes for development to be assessed against. The following codes are applicable to the proposed development:

- Rural Zone Code
- Extractive Industry Code
- Access, Parking and Transport Code
- Stormwater Management Code
- Waste Management Code
- Works Code
- Biodiversity Overlay Code
- Bushfire Hazard Overlay Code
- Steep Land Overlay Code

A full assessment of the proposed development against the relevant Planning Scheme code provisions has been provided in **Attachment 16 – Council Code Assessment**).

5.2.5 Strategic Framework

The proposed development is listed as 'Impact Assessable' meaning it must be assessed against the entirety of the Planning Scheme, including the Strategic Framework. The Strategic Framework sets the policy direction for the Planning Scheme and forms the basis for ensuring appropriate development occurs within the local government area. The Strategic Framework is made up of the following six (6) themes which collectively represent the policy intent of the Planning Scheme:

1. Settlement pattern
2. Natural environment and hazards
3. Community identity and diversity
4. Access and mobility
5. Infrastructure and services
6. Natural resources and economic development

The proposed development has been assessed against relevant sections of the Strategic Framework to demonstrate compliance with the policy of the Planning Scheme.

5.2.5.1 Settlement Pattern

Element – Rural	
Specific Outcomes	**Response**
(1) Rural land has important economic, environmental and scenic values and provides for uses including primary production, mining and tourism.	The land will continue to support an extractive industry use being the Stanwell Quarry which will provide essential construction materials to the region.
(2) Rural land is not used for urban development and is to be protected for its productive, landscape and natural values.	No urban development is proposed and the known hard rock resource on the site will be utilised as part of the proposed development.

5.2.5.2 Natural Environment and Hazards

Element – Natural Hazards and Climate Change	
Specific Outcomes	**Response**
(1) Development in areas subject to natural hazards (including flood, bushfire, steep land, erosion and storm tide) avoids an unacceptable risk associated with the extent or severity of the natural hazard, and	The location of the proposed extraction area extension is mapped within the very high bushfire hazard classification. Quarries by their nature are well equipped to assist and/or deal with bushfire events. The use of heavy earthmoving machinery and water trucks used in the quarry operation

the safety of people is maintained and damage to property is not increased.	can be called upon to assist in the event of a bushfire. The quarry sump and sediment basins can be used as a water supply for firefighting purposes in a bushfire event.

Element – Water Resources, Catchment Management and Healthy Waters	
Specific Outcomes	**Response**
(4) Water quality and the health of associated ecosystems is achieved by: (a) Protecting water resource catchments, in particular the Fitzroy River including all feeder systems up stream of the barrage and Dam 7 at Mount Morgan from development; (b) Necessary regulation and continued monitoring and controls on the quality of water entering the Fitzroy River from western tributaries, in particular control of the quality and timing of water discharging from industry and mining; (c) Incorporating total water cycle management, water sensitive urban design and wastewater quality management measures; and (d) Efficient water use improve demand management.	Water management has been identified as a primary consideration for the proposed extension to the quarry pit area and has been addressed by a Water Quality Management Plan included as Section 4.2 of the SBMP. The objective of the Water Quality Management Plan is to ensure that water resources are utilised efficiently on the site as part of the quarry operation and the quality of water leaving the site does not impact on the environmental values downstream of the Stanwell Quarry.

Element – Air, Noise and Hazardous Materials	
Specific Outcomes	**Response**
(1) The health, well-being, amenity and safety of communities and individuals are protected from the impacts of air, noise and odour emissions, and hazardous materials.	The proposed development is for an extension to the existing Stanwell Quarry operation which is appropriately located to ensure potential impacts on sensitive receivers will be minimised. The nearest sensitive receivers are located approximately 3.5 kilometres north-east of the proposed extension area. This separation distance, along with the implementation of operational controls and management measures, will ensure that potential impacts on sensitive receivers as a result of the quarry operation are minimised. These measures have been included in the various management plans within the SBMP.

Element – Waste	
Specific Outcomes	**Response**
(1) Development minimises the generation of solid and liquid waste and the impacts of waste on the natural environment.	The type of wastes that may be generated at the quarry include, but are not necessarily limited to, the following: • Regulated wastes (e.g. batteries, oil filters, waste oil/hydrocarbons and containers, oil/water emulsions and tyres). • Scrap metal and used or faulty parts and equipment. • General waste such as food waste, packaging and consumables. • Green waste. The Waste Management Plan included as Section 4.6 of the SBMP details measures for management of waste at the site, with reference to the requirements of the *Waste Reduction and Recycling Act 2011.*

5.2.5.3 Community Identity and Diversity

Strategic Outcomes	
Specific Outcomes	**Response**
(2) The community is self sufficient and does not rely on services and facilities located in other regions. Development contributes to the provision of new social infrastructure including land.	The proposed development will enable the continued operation of the Stanwell Quarry which is a significant contributor to the material needs of local and regional communities and to economic activity and development within the Rockhampton region. The Stanwell Quarry will continue to supply essential construction materials to the Rockhampton region for the provision of social infrastructure and help minimise the need to source and transport materials from other regions.

5.2.5.4 Access and Mobility

Strategic Outcomes	**Response**
(4) The safety and efficiency of transport infrastructure, including the Bruce and Capricorn Highways and other state and local roads, rail, airport and seaports, are not compromised by development.	The TIA prepared for the proposed development confirmed that the quarry will have a minimal impact on the mid-block section of Power Station Road, with adequate capacity expected to be available to cater for the additional heavy vehicles. Given that the proposal will only impact on the through movements at each intersection along Power Station Road, the impact of the proposed haulage on the operation (including vehicle delay) of the relevant intersections on the local road network can be deemed to be negligible (refer **Attachment 8 – Traffic Impact Assessment**).

Element – Road Network	
Specific Outcomes	**Response**
(3) Development contributes to or provides local roads to support the state road network, to the extent provided for by the local government infrastructure plan.	A contribution rate of approximately 20 cents per tonne is proposed to offset the potential impacts of the proposed development on Power Station Road.

5.2.5.5 Natural Resources and Economic Development

Strategic Outcomes	**Response**
(4) Development protects and, where possible, leverages the intrinsic economic value of the region's natural resources, including productive grazing, agricultural and forestry land, extractive and mineral resources, marine and coastal resources, and existing and planned water resources, including watercourses, water bodies and groundwater.	The proposed development is for an extension to the existing Stanwell Quarry operation which will ensure that a known extractive resource is protected and utilised as a material of economic valuable for the region.

Element – Industrial Development	
Specific Outcomes	**Response**
(1) Existing lawful industrial uses which are located outside of designated industrial areas may continue to operate. The increased production or diversification of these uses may only occur if the adverse impacts on nearby sensitive land use(s) are mitigated and existing separation distance	The proposed development is for an extension to the existing Stanwell Quarry operation which is appropriately located to ensure potential impacts on sensitive receivers will be minimised. The nearest sensitive receivers are located approximately 3.5 kilometres north-east of the proposed extension area. This separation distance, along

maintained. Relocation of this industries to designated industrial areas is supported and encouraged.	with the implementation of operational controls and management measures, will ensure that potential impacts on sensitive receivers as a result of the quarry operation are minimised.

Element – Extractive and Mineral Resources	
Specific Outcomes	**Response**
(1) State, regional and locally significant extractive resources and existing mining operations are identified and protected from development that prevents or constrains extraction and transportation of the resource.	The proposed development is an extension to the exiting Stanwell Quarry and help ensure that an identified resource is protected and utilised.
(2) Extraction of sand and other materials from the Fitzroy River and other waterways does not detract from the water quality of the waterway.	The Stanwell Quarry does not extract from the Fitzroy River or other waterways.
(3) Development is serviced by appropriate infrastructure (particularly suitable transport network).	The site is currently serviced by suitable transport infrastructure for access. The TIA prepared for the proposed development confirmed that the quarry will have a minimal impact on the mid-block section of Power Station Road, with adequate capacity expected to be available to cater for the additional heavy vehicles. Given that the proposal will only impact on the through movements at each intersection along Power Station Road, the impact of the proposed haulage on the operation (including vehicle delay) of the relevant intersections on the local road network can be deemed to be negligible. It has been determined that the Power Station Road / Stanwell Quarry access can cater for the wheel paths of the haulage vehicle movements, with no widening required along Power Station Road or at each intersection along its haulage route, including the Capricorn Highway / Power Station Road intersection to accommodate the proposed operation (refer **Attachment 8 – Traffic Impact Assessment**).
(4) The reuse of the Mount Morgan mine tailings is supported provided that sensitive land use(s) within Mount Morgan, scenic amenity and environmental values are not impacted upon.	The proposed development does not involve the reuse of the Mount Morgan mine tailings.
(5) Sensitive land use(s) should not encroach upon: (a) known mineral and extractive resource reserves, transport routes and separation areas (namely Benedict Road, Peak Hill and Pink Lily); and (b) the extraction of the material from mineral or extractive resource reserves, including processing and haulage.	The proposed development is for an extension to the extraction area of the Stanwell Quarry.

6.0 Conclusion and Ground to Support Development

This report has been prepared to support a development application for a Material Change of Use – Extractive Industry and Operational Work – Vegetation Clearing at 294 Hume Road, Kabra, properly described as Lot 1 on RP616642 and part of Lot 44 on SP140243.

The proposal seeks to realise the potential of a known hard rock extractive resource by extending and defining the extraction footprint of the Stanwell Quarry. The site is suitably located for the extension of the quarry footprint as it is surrounded by other industrial uses (Stanwell Power Station and other extractive industry operation) and located approximately 3.5 kilometres from the nearest sensitive receiver. This separation distance along with the onsite controls and management measures outlined in the SBMP, will ensure that potential environment and amenity impacts are minimised. The SBMP will be the principal management tool for guiding environmental management on the site by describing the site operations, the potential environmental impacts of these activities, and how any potential impacts may be mitigated or managed to achieve acceptable environmental outcomes of for the activity.

An ecological assessment of the site has been undertaken by SHG to identify the ecological values within the area for the proposed quarry operation and determine the potential impacts to those values as a result of the proposed development. The assessment did not identify any unique or significant biodiversity values within the proposed quarry operation area and as such, the impact to vegetation is considered to be minimal. Fauna recorded across the site included small reptiles, mammals and avifauna, some which are likely to utilise the site as part of a broader home range. All species detected are considered common in a local or regional context with no species listed as Threatened under state or federal legislation definitively recorded on site.

The TIA prepared for the proposed development confirmed that the quarry will have a minimal impact on the surrounding road network and the existing site access from Power Station Road onto the quarry access road can cater for the wheel paths of the haulage vehicle movements. The TIA concluded that with a suitable/alternative road contribution to offset the expected increased maintenance and rehabilitation requirements, the additional traffic generated by quarry operation will have a minor impact on the adjacent road network.

Having regard to the assessment conducted, it is considered that the proposed development has been demonstrated as consistent with the planning and environmental objectives outlined with the relevant State and local authority planning instruments and policies. Therefore, it is recommended that the proposed development be supported by the relevant authorities and should be approved by Council, subject to reasonable and relevant conditions.

figures

attachments

Attachment 1

2002 Development Permit

Attachment 2

Existing Environmental Authority

Attachment 3

Council Pre-lodgement Meeting Minutes

Attachment 4

SARA Pre-lodgement Advice

Attachment 5

Title Searches

Attachment 6

Proposal Plans

Attachment 7

Site Based Management Plan

Attachment 8

Traffic Impact Assessment

Attachment 9

Ecological Assessment Report

Attachment 10

SDAP Code Assessment

Attachment 11

State Code 16 Response

Attachment 12

State Code 22 Response

Attachment 13

Environmental Assessment Report

Attachment 14

Relevant Purpose Determination

Attachment 15

Flora Survey Report

Attachment 16

Council Code Assessment

8

11 September 2002

Mr DC Seierup
MS 250
ROCKHAMPTON QLD 4700

Form 6 - Development Application Decision Notice

Integrated Planning Act 1997

The Development Application No. 230 for the issue of a Development Permit for extractive Industry and Materials Screening at 11 Hume Road, Stanwell on land described as Lot 1 RP616642, Parish of Stanwell was assessed and approved with conditions by the Fitzroy Shire Council on 10 September 2002.

The following schedule provides all the relevant details:

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1. **Concurrence / Advice agency**

   Environmental Protection Agency
   PO Box 3130
   ROCKHAMPTON SHOPPING FAIR QLD 4701

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2. **Assessment Manager's Conditions**

1. This approval of a Development Permit for a material change of use lapses if:-

   - The use or erection of a building or other structure associated with the use, has not been commenced within four (4) years of the date of issue of the Development Permit unless application is made and approved by Council for an extension; or

     The use of any premises pursuant to the Development Permit ceases.

2. All material extracted from the site shall be carried from the site via Power Station Road to the Capricorn Highway except for that material carted to premises adjoining Power Station Road.

Trevor Gargan
☎ 4931 5425

3. The applicant shall, prior to removing material in excess of 5,000 tonnes per annum, except where that material is being carted to the Australian Magnesium Company's construction site on Power Station Road, enter into an agreement with Council in respect of the maintenance of Power Station Road.

4. In regard to cartage to AMC's construction site, the applicant shall be responsible for undue wear and tear on Power Station Road caused by traffic generated by the proposal. To enable this to be assessed, Council shall, in consultation with the applicant, carry out an assessment of the road prior to commencement of the use and after all material has been carted to the AMC construction site.

CONCURRENCE AGENCY CONDITIONS

As per 6 pages attached to this Notice

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3. **Reasons for refusal**

Not applicable.

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4. **Approval Type**

Material Change of Use – Impact Assessment

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5. **Further Development Permits required**

Not applicable

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6. **Compliance with codes for self-assessable development**

Not applicable.

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7. **Properly made submissions**

No properly made submissions were made regarding this application.

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8. **Rights of Appeal**

In accordance with the requirements of Section 3.5.15(4) of the Integrated Planning Act 1997, you are advised that you have the right of appeal against these conditions.

9. **Assessment Manager**

Name: Fitzroy Shire Council



.....

A G McDougall
DIRECTOR – TECHNICAL SERVICES.

As delegate of Fitzroy Shire Council on 11 September 2002.

Permit

Environmental Protection Act 1994

Environmental authority EPPR00424513

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPPR00424513

Environmental authority takes effect on 16 April 2018

Environmental authority holder(s)

Name(s)	Registered address
AMCOR QUARRIES & CONCRETE PTY LTD	33 Enterprise Drive Gracemere QLD 4702

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 29/FN308
Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 1/RP616642
Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 6/RP620652
Prescribed ERA, ERA 16 - Extraction and Screening, 3: Screening, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 29/FN308
Prescribed ERA, ERA 16 - Extraction and Screening, 3: Screening, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 1/RP616642
Prescribed ERA, ERA 16 - Extraction and Screening, 3: Screening, in a year, the following quantity of material, (b) more than 100,000t but not more than 1,000,000t	Lot 6/RP620652

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any

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inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the Environmental Protection Act 1994 (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the Planning Act 2016 or an SDA Approval under the State Development and Public Works Organisation Act 1971), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

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Clancy Mackaway
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date issued: 16 April 2018

Enquiries:
Energy, Extractive and South West Queensland Compliance
Department of Environment and Science
400 George Street, Brisbane QLD 4000
Phone: (07) 3330 5715
Email: energyandextractive@des.qld.gov.au

Obligations under the Environmental Protection Act 1994

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Legislative Requirements and Conditions of Environmental Authority

Condition

General

Schedule 1

General Conditions

The environmentally relevant activities conducted at the locations as described in Table 1 below must be conducted in accordance with the following site specific conditions of approval.

Table 1:

Environmentally relevant activities	Locations
16(2b) extracting, other than by dredging, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t. 16(3b) screening, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t.	Stanwell Quarry, Hume Road and Stanwell - Lot 1 Plan RP616642
16(2b) extracting, other than by dredging, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t. 16(3b) screening, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t.	Castle Creek Quarry, Defence Road and Theodore - Lot 6 Plan RP620652
16(2b) extracting, other than by dredging, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t. 16(3b) screening, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t.	Fairview Quarry, Fairview Road and Banana - Lot 29 Plan FN308

1G1

Activities conducted under this environmental authority must not be conducted contrary to any of the following limitations:

1. Extracting and screening activities on Lot 1 Plan RP616642, Lot 6 Plan RP620652 and Lot 29 Plan FN308 must not exceed 1,000,000t in a year.

1G2 All reasonable and practicable measures must be taken to minimise the likelihood of environmental harm being caused.

1G3 Any breach of a condition of this environmental authority, must be reported to the administering authority as soon as practicable, or at most, within 24 hours of you becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions undertaken.

1G4 Other than as permitted by this environmental authority, the release of a contaminant into the environment must not occur.

1G5 All information and records that are required by the conditions of this environmental authority must be kept for a minimum of five (5) years. Environmental monitoring results must be kept until surrender of this environmental authority. All information and records required by the conditions of this environmental authority must be provided to the administering authority upon request.

1G6 All analyses required under this environmental authority must be carried out by a laboratory that has NATA certification, or an equivalent certification, for such analyses.

1G7 An appropriately qualified person(s) must monitor, record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.

1G8 When required by the administering authority, monitoring must be undertaken in the manner prescribed by the administering authority, to investigate a complaint that is not considered by the administering authority to be frivolous or vexatious, of environmental nuisance arising from the activity. The monitoring results must be provided to the administering authority upon request.

1G9 The activity must be undertaken in accordance with written procedures that:

1. identify potential risks to the environment from the activity during routine operations, closure and an emergency

2. establish and maintain control measures that minimise the potential for environmental harm

3. ensure plant, equipment and measures are maintained in a proper and effective condition

4. ensure plant, equipment and measures are operated in a proper and effective manner

5. ensure that staff are trained and aware of their obligations under the Environmental Protection Act 1994

6. ensure that reviews of environmental performance are undertaken at least annually.

1G10 Chemicals and fuels in containers of greater than 15 litres must be stored within a secondary containment system.

Condition

Air

1A1 Odours or airborne contaminants which are noxious or offensive or otherwise unreasonably disruptive to public amenity or safety must not cause nuisance to any sensitive place or commercial place.

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Condition

Water

1WT1 Stormwater contaminated by the activity must be managed to minimise or prevent any adverse impacts on the values of the receiving environment.

1WT2 Erosion and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.

1WT3 The stormwater runoff from disturbed areas, generated by (up to and including) a 24 hour storm event with an average recurrence interval of 1 in 5 years must be retained on site or managed to remove contaminants before release.

1WT4 In addition to WT1, the release to waters must not:

1. have any other properties at a concentration that is capable of causing environmental harm

2. produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other visually objectionable matter.

Condition

Acoustic

1N1 Noise generated by the activity must not cause environmental nuisance to any sensitive place or commercial place.

1N2 Generation of substantial low frequency noise is not permitted.

1N3 When required by the administering authority, noise monitoring must be undertaken in accordance with the associated monitoring requirements of Table 1—Noise Limits, and the results notified within 14 days to the administering authority. Monitoring must include:

1. LAeq, adj, T
2. Background noise (Background) as LA 90, adj, T
3. MaxLpA,T
4. the level and frequency of occurrence of any impulsive or tonal noise
5. atmospheric conditions including wind speed and direction
6. effects due to extraneous factors such as traffic noise
7. location, date and time of recording.

Condition

Land

1L1 Treatment and management of acid sulfate soils must comply with the current edition of the Queensland Acid Sulfate Soil Technical Manual.

1L2 Land that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that:

1. suitable native species of vegetation for the location are established and sustained for earthen surfaces
2. potential for erosion is minimised
3. the quality of water, including seepage, released from the site does not cause environmental harm
4. potential for environmental nuisance caused by dust is minimised
5. the water quality of any residual water body does not have potential to cause environmental harm
6. the final landform is stable and protects public safety.

1L3 Rehabilitation of disturbed areas required under condition L2, must take place progressively as works are staged and new areas of extraction are commenced.

Condition

General

1WS1 All waste generated in carrying out the activity must be reused, recycled or removed to a facility that can lawfully accept the waste.

Schedule 2 Site Specific Conditions

The environmentally relevant activities conducted at the locations as described in Table 2 below must be conducted in accordance with the following site specific conditions of approval.

Table 2:

Environmentally relevant activities	Locations
16(2b) extracting, other than by dredging, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t. 16(3b) screening, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t.	Stanwell Quarry, Hume Road and Stanwell - Lot 1 Plan RP616642
16(2b) extracting, other than by dredging, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t. 16(3b) screening, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t.	Castle Creek Quarry, Defence Road and Theodore - Lot 6 Plan RP620652

16(2b) extracting, other than by dredging, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t. 16(3b) screening, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t.	Fairview Quarry, Fairview Road and Banana - Lot 29 Plan FN308

2G1 A minimum buffer distance of 50m must be maintained between stockpile areas and the high banks of any watercourse, lake or wetland.

Condition

Acoustic

2N1 Blasting activities must not exceed the limits for peak particle velocity and air blast overpressure in Table 1 - Blasting noise limits when measured at any sensitive place or commercial place in accordance with the associated monitoring requirements.

Table 1 - Blasting noise limits

Blasting criteria	Blasting limits
Airblast overpressure	115 dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time.
Ground vibration peak particle velocity	5mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time.

Associated monitoring requirements

1. Monitoring must be in accordance with the most recent editions of the administering authority's 'Noise and Vibration from Blasting' guideline and Noise Measurement Manual and any relevant Australian standard.

2. All monitoring devices must be correctly calibrated and maintained.

3. Any monitoring of noise emissions from the activity must be undertaken when the activity is in operation.

2N2 Blasting must be carried out in accordance with the current edition of the administering authority's 'Noise and vibration from blasting guideline' and with Australian Standard 2187.

2N3 Unless prior approval is obtained from the administering authority:

1. blasting is only permitted during the hours of 9am to 3pm Monday to Friday, and from 9am to 1pm on Saturdays, and

2. blasting is not permitted at any time on Sundays or public holidays.

2N4 When required by the administering authority, a blast monitoring program must be developed and implemented to monitor compliance with Table 1 - Blasting noise limits at any sensitive place or commercial place.

Condition

General

Schedule 3 Site Specific Conditions

The environmentally relevant activities conducted at the locations as described in Table 3 below must be conducted in accordance with the following site specific conditions of approval.

Table 3:

Environmentally relevant activities	Locations
16(2b) extracting, other than by dredging, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t. 16(3b) screening, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t.	Castle Creek Quarry, Defence Road and Theodore - Lot 6 Plan RP620652

16(2b) extracting, other than by dredging, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t. 16(3b) screening, in a year, the following quantity of material, more than 100,000t but not more than 1,000,000t.	Fairview Quarry, Fairview Road and Banana - Lot 29 Plan FN308

3G1 The activity must not be carried out until you have given financial assurance to the administering authority.

3G2 If the administering authority increases the amount of financial assurance you must give the additional financial assurance to the administering authority within 28 days of receiving written notice of the increase.

3G3 The registered operator must maintain a buffer where practicable to screen the activities from neighbours and maintain visual amenity, sufficient to screen ongoing operations from adjacent roads and sensitive receptors.

Condition

Air

3A1 Dust and particulate matter emissions must not exceed the following concentrations at any sensitive place or commercial place:

a) dust deposition of 120 milligrams per square metre per day, when monitored in accordance with Australian Standard AS 3580.10.1 (or more recent editions); or

b) a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24 hour averaging time, when monitored in accordance with Australian Standard AS 3580.9.6 (or more recent editions).

3A2 Dust and particulate matter monitoring must:

a) be undertaken a in response to a dust complaint and

b) be carried out at places relevant to the potentially affected sensitive place or commercial place and at suitable representative reference site(s) unlikely to be affected by the activity; and

c) be carried out at a sufficient number of monitoring points to enable compliance assessment with condition A3 above; and

d) take into account:

i. locations of dust and particulate sources;

ii. locations of persons or sites potentially affected by any release of dust or particulate matter from the activity; and

e) be carried out in accordance with the latest edition of the administering authority's Air Quality Sampling Manual; and

f) be undertaken in conjunction with the recording of precipitation, wind speed and direction in accordance with the requirements of the relevant standards within AS3580.

Condition

Water

3WT1 A groundwater monitoring system must:

a) be designed and installed by an appropriately qualified person(s) with

experience and qualifications in hydrology and groundwater monitoring; and

b) include a sufficient number of bores installed at locations and depths which yield representative groundwater samples from at least the uppermost aquifer so as to:

i. detect any seepage of contaminants to groundwater from the site; and

ii. establish the quality of groundwater affected by any seepage of contaminants; and

c) include monitoring of background groundwater quality, with both hydraulically up-gradient bore(s) or background bore(s) that have not been affected by any release of contaminants to groundwater from the activity and hydraulically down gradient bore(s) of the activity.

Definitions Definitions

Key terms and/or phrases used in this document are defined in this section and underlined throughout this document. Applicants should note that where a term is not defined, the definition in the Environmental Protection Act 1994, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

Activity means the environmentally relevant activities, whether resource activities or prescribed activities, to which the environmental authority relates.

Administering authority means the Department of Environment and Heritage Protection or its successor or predecessors.

Airblast overpressure is the energy transmitted from the blast site within the atmosphere in the form of pressure waves. As these waves pass a given position, the pressure of the air rises very rapidly then falls more slowly then returns to the ambient value after a number of oscillations. The pressure wave consists of both audible (noise) and inaudible (concussion) energy. The maximum excess pressure in this wave is known as the peak air overpressure, generally measured in decibels using the linear frequency-weighting.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.

Background means noise, measured in the absence of the noise under investigation, as L A90,T being the A-weighted sound pressure level exceeded for 90 per cent of the time period of not less than 15 minutes, using Fast response.

Background bore means groundwater monitoring bore, constructed in accordance with the Minimum Construction Requirements for Water Bores in Australia, and used to sample groundwater from an aquifer the water quality of which may be potentially affected by the activity. This may be an up-gradient bore, down-gradient bore or bore in the same aquifer in a nearby location unaffected by the activity.

Blasting is the use of explosives to fracture:

• rock, coal and other minerals for later recovery; or

• structural components or other items to facilitate removal from a site or for reuse.

Commercial place means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

Down-gradient bore means a background bore in a location hydraulically down gradient of those aspects of the activity that may affect groundwater quality.

Dredging includes extraction of mud, sand, coral, ballast, shingle, gravel, clay, earth and other material from the bed of Queensland tidal and non-tidal waters. Dredging does not include the banks of a waterway.

Environmental nuisance as defined in Chapter 1 of the Environmental Protection Act 1994.

Financial assurance as defined in Chapter 5 of the Environmental Protection Act 1994.

Groundwater means water that occurs naturally in, or is introduced artificially into, an aquifer.

Groundwater monitoring system means a system of groundwater monitoring devices, such as monitoring bores, used to provide data in respect to the level and quality of groundwater in the uppermost aquifer where the location of the groundwater monitoring devices is such that comparisons of groundwater quality and groundwater level can be made between groundwater flowing from beneath the site (down-gradient flow) of the activity and groundwater flowing towards the site of the activity (up-gradient flow).

Measures has the broadest interpretation and includes plant, equipment, physical objects, bunding, containment systems, monitoring, procedures, actions, directions and competency.

NATA means National Association of Testing Authorities.

Noxious means harmful or injurious to health or physical well-being.

Offensive means causing offence or displeasure; is unreasonably disagreeable to the sense; disgusting, nauseous or repulsive.

Release of a contaminant into the environment means to:

• deposit, discharge, emit or disturb the contaminant

• cause or allow the contaminant to be deposited, discharged, emitted or disturbed

• fail to prevent the contaminant from being deposited, discharged emitted or disturbed

• allow the contaminant to escape

• fail to prevent the contaminant from escaping.

Secondary containment system means a system designed, installed and operated to prevent any release of contaminants from the system, or containers within the system, to land, groundwater, or surface waters.

Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:

• a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential

• premises; or

• a motel, hotel or hostel; or

• a kindergarten, school, university or other educational institution; or

• a medical centre or hospital; or

• a protected area under the Nature Conservation Act 1992, the Marine Parks Act 1992 or a World Heritage Area; or

• a public thoroughfare, park or gardens; or

• for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

24 hour storm event with an average recurrence interval of 1 in 5 years means the maximum rainfall depth from a 24 hour duration precipitation event with an average recurrence interval of once in 5 years. For example, an Intensity-Frequency-Duration table for a 24 hour duration event with an average recurrence interval of 1 in 5 years, identifies a rainfall intensity of 7.09mm/hour. The rainfall depth for this event is therefore 24 hour x 7.09mm/hour = 170.16mm.

Up-gradient bore means a background bore, in a location hydraulically up gradient of all potential influences of the activity that may affect groundwater quality.

Vibration is the oscillating or periodic motion of a particle, group of particles, or solid object about its equilibrium position.

Waters includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

You means the holder of the environmental authority.

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PRELODGEMENT

MEETING MINUTES

MEETING DETAILS	
Date of Meeting: 18 February 2021, 10:30am	
Council Attendees:	**Applicant Attendees:**
▪ Thomas Gardiner – Senior Planning Officer, Development Assessment ▪ Tilak Mudalige – Development Engineer, Community Services ▪ Chris Newsome – Senior Environmental Health Officer, Community Services ▪ Rick Palmer – Senior Executive Industry Engagement - Advance Rockhampton	▪ Corey Howell – AMCOR Quarries and Concrete ▪ Jim Lawler – Groundwork Plus ▪ Sam Lyons – Groundwork Plus

PROPOSAL:
Address: 294 Hume Road, Kabra
Real Property Description: Lot 1 on RP616642 and Lot 44 on SP140243
Details of Proposal: Proposed expansion to the Stanwell Quarry
Issues identified by the Applicant for discussion: • Traffic • Infrastructure charges • Fencing • Noise, dust, vibration and stormwater assessments • Biodiversity • Bushfire • Special Management Area
Supporting information/documentation provided by Applicant: Report and indicative plan of development / extraction

MINUTES
PLANNING ASSESSMENT:
Defined Use: Extractive Industry
Planning Zone: Rural Zone
Type of Application Required: Material Change of Use
Level of Assessment: Impact

DEVELOPMENT ASSESSMENT:

- Proposed development will require 'impact assessment'. A full assessment is required against the applicable benchmarks in the *Rockhampton Region Planning Scheme 2015* (version 2.1). This includes the Strategic Framework, Zone Codes, Development and Overlay Codes, and the Extractive Industry Code.
- Council will not levy infrastructure charges for the proposed expansion to the existing quarry. The proposed development will not result in an increased demand on trunk infrastructure networks.
- An alternative solution can be accepted regarding fencing. Acceptable Outcome 5.1 of the Extractive Industry Code requires security fencing for the full length of the perimeter of the site. An alternative solution must be provided which complies with corresponding Performance Outcome 5.
- The site is affected by the Biodiversity Areas Overlay (MLES). Council will not require an ecological assessment to specifically address the MLES. It was requested that an assessment be provided against the relevant sections of the Biodiversity Areas Overlay Code, as this is still an assessment benchmark. As the application will also involve Operational Work for Native Vegetation Clearing, Council requested a copy of the Ecological Report addressing the MSES (as part of that application), be submitted with the MCU.
- An assessment is required against the Bushfire Hazard Overlay Code, as this is an applicable assessment benchmark. The proposed development may not comply with Acceptable Outcome 3.1 of the Overlay Code. This relates to the storage of hazardous materials within a bushfire hazard area (i.e. diesel).
- The proposed development application is not required to provide an assessment against the Special Management Area Overlay. An Extractive Industry is not a land use which requires an assessment against this Overlay Code.

DEVELOPMENT ENGINEERING UNIT:

- A Pavement Impact Analysis is required for Power Station Road.

  Note 1: other quarries on Power Station Road have obtained approval in 2002 as well, and no road maintenance levy have been proposed as part of that approval.

  Note 2: The following traffic count data on Power Station Road is provided for your information.

Year	Location Description	AADT-B	Percentage Comm_B	Speed limit	AM peak volume (6.00-7.00 AM)	PM peak volume (4.00-5.00 PM)
2016	Chainage 3.45km	313.2	20.1	100	80.7	62.9

- Site access from Power Station Road must be upgraded to comply with the *Capricorn Municipal Development Guidelines* – this will be an approval condition.

Infrastructure Charges (not including actual charges)

The Adopted Infrastructure Charges are available to view on Council's Website. These are located in the Fees and Charges Section. Please see the link below.

http://www.rockhamptonregion.qld.gov.au/Planning-and-Building/Infrastructure-Charges

OUTCOME SUMMARY:
The proposed development will require the lodgement of a Material Change of Use (MCU) application, which will require impact-assessment. The proposed development considered appropriate for the site and zone given the land area requirements and the need for the use to be away from sensitive receptors.

ADVISORY NOTE:
These notes have been provided as informal and non binding comments and are intended for use as a guide only in providing feedback on the proposal presented to the Unit. These discussions do not bind or fetter the Council in any way in exercising its statutory responsibilities in assessing any development application which might be made to the Council.
Link to DA Forms https://planning.dsdmip.qld.gov.au/planning/better-development/application-forms-and-templates Link to Planning Schemes http://www.rockhamptonregion.qld.gov.au/Planning-and-Building/Planning-Schemes-and-Studies Link to Development Assessment Fees http://www.rockhamptonregion.qld.gov.au/About-Council/Finance-Rates-and-Budget/Fees-and-Charges Development Incentives http://www.rockhamptonregion.qld.gov.au/Planning-and-Building/Development-Incentives

Queensland Government

SARA reference: 2102-21005 SPL
Applicant reference: 1662.DA1.307.003

25 February 2021

AMCOR Quarries & Concrete
PO Box 1779
MILTON QLD 4064
planning@groundwork.com.au

Attention: Sam Lyons

Dear AMCOR Quarries & Concrete

SARA Pre-lodgement advice - 397 Power Station Road, Stanwell; 294 Hume Road, Kabra

I refer to your pre-lodgement request received on 10 February 2021 in which you sought pre-lodgement advice from the State Assessment and Referral Agency (SARA) regarding the proposed development at the above address. This notice provides advice on aspects of the proposal that are of relevance to SARA.

SARA's understanding of the project

The applicant is applying for a development permit for a Material Change of Use (MCU) for an extractive industry and a development permit for Operational Works for native vegetation clearing. The proposed development is an expansion of the footprint of an existing quarry located on lot 1RP616642 into new areas. Extraction is to be at a rate of up to 1,000,000t per annum.

The proposed application includes Lot 44 on SP140243 for access purposes only (no extraction). Lot 44 is within 25m of a rail corridor. The SARA advice is based on the understanding that no extraction is to occur on Lot 44. Should extraction be proposed on Lot 44, further pre-lodgement advice should be sought from SARA.

The MCU component will exceed the Schedule 20 (Planning Regulation 2017) threshold for extractive industry (>10,000t). The development will result in the clearing of greater than 5ha of regulated vegetation.

Fitzroy/Central regional office
Level 2, 209 Bolsover Street,
Rockhampton
PO Box 113, Rockhampton QLD 4700

Supporting information
The advice in this letter is based on the following documentation that was submitted with the pre-lodgement request.

Drawing/report title	Prepared by	Date
Request for pre-lodgement meeting	Groundwork Plus	10 February 2021

Pre-lodgement advice

The following advice outlines the aspects of the proposal that are of relevance to SARA.

SARA's jurisdiction and fees	
1	The application will require referral to SARA under the following provisions of the Planning Regulation 2017: • Schedule 10, Part 9, Division 4, Subdivision 1, Table 1, Item 1 – State transport infrastructure This will require a fee of $3,373 to be paid in accordance with Schedule 10, Part 9, Division 4, Subdivision 1, Table 1, Item 8 (b)(ii) • Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1 – State transport corridor This will require a fee of $1,685 to be paid in accordance with Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 8 (b)(ii) *Note: this trigger may be avoided if the premises is appropriately defined to exclude those parts of Lot 44 on SP140243 that are within 25m of the railway corridor.* • Schedule 10, Part 3, Division 4, Table 1, Item 1 – Assessable development under s 5. This will require a fee of $13,486 to be paid in accordance with Schedule 10, Part 3, Division 4, Table 1, Item 5 (c) • Schedule 10, part 5, div 4, table 2, Item 1 (Planning Regulation 2017)—Material change of use for a non-devolved environmentally relevant activity. This will require a fee of $3,373 to be paid in accordance with Schedule 10, Part 5, div 4, table 2, item 5(b)(ii). SARA would be a referral agency for the proposed application
Key matters and action items	
2	• The development application will constitute a Material Change of Use (MCU) for an Environmentally Relevant Activity for ERA 16(2)(b) as there is an increase to the intensity or scale of the land use (see further detail below). To avoid this trigger, the applicant would need to provide evidence that the expansion of the extraction area has been approved as part of a previous application in order to not require the submission of the an application for an MCU to undertake ERA 16(2)(b) or an amendment application to the Department of Environment and Science for Environmental Authority EPPR00424513. For example, the applicant may provide confirmation of the extent of extraction area authorised by the development permit dated 11 September 2002. • The proposed application must demonstrate compliance with State code 6: Protection of state transport networks. It is recommended that a RPEQ certified traffic impact assessment and pavement impact assessment is provided to demonstrate compliance with State code 6.
Lodgement material	
3	It is recommended that the following information is submitted when referring the application to SARA: • DA form 1. • Application for an environmental authority form, 'EM941'. • A full response to the relevant sections of SDAP:

	○ State code 2: Development in a railway environment ○ State Code 6: Protection of state transport networks ○ State code 16: Native vegetation clearing ○ State code 22: Environmentally relevant activities Landowner's consent. • Relevant plans as per the DA Forms guide
State transport infrastructure	
4	It is recommended that a RPEQ certified traffic impact assessment and pavement impact assessment is provided to demonstrate compliance with State code 6. It is also recommended that the following is provided: - evidence of extraction rate approved by the development permit (tonnes per annum) - details of historical extraction rates - details of proposed maximum extraction rates
Vegetation clearing	
5	General Advice (a) The application requires referral for the clearing of native vegetation as the proposal will involve clearing that is Assessable Development under the *Planning Act 2016*, or will result in accepted operational work under Schedule 21 of the Planning Regulation 2017. (b) The development application will need to address and meet the requirements of the State Development Assessment Provisions - State code 16: Native vegetation clearing (code). For a material change of use and / or reconfiguring a lot involving extractive industry, the applicant must demonstrate how to meet the performance outcomes below: a. Table 16.2.2 – PO1 – PO4 b. Table 16.2.3 – PO7, PO11, PO16, PO20, PO22 – PO24, PO27 and PO28. (c) Guidance on how to comply with this code is provided in State Development Assessment Provisions Guidance material: State code 16: Native vegetation clearing, Department of Natural Resources, Mines and Energy, 2020. This guideline is available online at: https://www.dnrme.qld.gov.au/__data/assets/pdf_file/0010/1258075/state-code-16-veg-clearing-guide.pdf. Appendix 2 of this guideline provides details on the standard application information for all development applications involving the clearing of native vegetation. (d) The applicant is encouraged to consider the definition of clearing as a result of the material change of use as per section 16.6 the code for both Lots 44SP140243 and 1RP616642. Please ensure that the proposed development considers and identifies all clearing that will result from the change in use and clearing that that will become exempt clearing work if the development application is approved. (e) The following prescribed environmental matters, where there is a potential offset requirement, have been identified on the land subject to the proposed development: • An essential habitat area shown on the essential habitat map for *Cycas megacarpa*. Where development impacts essential habitat, the proponent needs to provide information which addresses all of the following: i. How the impacts have been reasonably avoided. ii. How the impacts have been reasonably minimised / mitigated. iii. Whether there is a significant residual impact - Guidance for determining if a prescribed activity will have a significant residual impact is provided in the Significant Residual Impact Guideline, Department State Development, Infrastructure and Planning, 2014 available at: https://dsdmipprd.blob.core.windows.net/general/dsdip-significant-residual-impact-guideline.pdf. iv. How the significance of the impact can be addressed through a suitable offset. v. Details of the proposed offset that achieves a conservation outcome for the

	impacted matter and is compliant with the Environmental Offsets Act 2014 and the Queensland Environmental Offsets Policy February 2020 version 1.8, Department of Environmental and Science available at: https://environment.des.qld.gov.au/__data/assets/pdf_file/0018/102834/offsets-policyv1-8.pdf. There are three offset delivery options under the environmental offsets framework: • Proponent-driven offsets i.e. land-based offsets or a Direct Benefit Management Plan; • Financial settlement offset; or • A combination of the two. The Queensland Environmental Offsets Policy explains the requirements for providing an offset. When a land-based offset is proposed, the *Guide for Determining Terrestrial Habitat Quality, version 1.3, February 2020* provides a methodology for determining the habitat quality of proposed offsets sites. When a financial settlement offset is proposed, the Financial Settlement Offset Calculator can be used to calculate the offset. The Guide and Calculator are available online at: https://www.qld.gov.au/environment/pollution/management/offsets/what-when. (f) Please note, clearing vegetation to the extent the clearing is in any category C areas or category R areas is not for a relevant purpose under the *Vegetation Management Act 1999*. Accordingly clearing of vegetation in these areas cannot be approved under a development approval. If your proposed development includes clearing vegetation in any category C or category R areas you should ensure the clearing can be undertaken as exempt clearing work or in accordance with an Accepted Development Vegetation Clearing Code (ADVCC). Clearing vegetation in any category C areas or category R areas that is not exempt or in accordance with an ADVCC is prohibited development. Information on exempt clearing work or ADVCCs is available online at: https://www.qld.gov.au/environment/land/management/vegetation/clearing-codes/download. (g) Please note there are protected plants mapped on Lot 1RP616642. Further information is available online here at: https://www.qld.gov.au/environment/plants-animals/plants/protected-plants/clearing.
6	Relevant Purpose Determination Application under s22A of the *Vegetation Management Act 1999* (a) Prior to submitting the development application for a material change of use and operational work to clear native vegetation, the applicant must first obtain written confirmation from the Department of Resources that the proposed development is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*. (b) Requests for a "relevant purpose determination" must be lodged in writing directly to the Department of Resources, and can be sent to either PO Box 1762, Rockhampton 4700, QLD or via email to CWVegetationapplication@dnrme.qld.gov.au. There is no fee for these requests. The application form and further information and assistance to apply for a section 22A determination is available online at: https://www.qld.gov.au/environment/land/management/vegetation/development.
7	Shapefiles SARA requests that shapefiles for the proposed development be provided with the application. These should include but not be limited to; the clearing footprint, proposed infrastructure, vegetation mapping and any other relevant information to support the application. The shapefiles for the clearing footprint need to include exempt activities as a result of the development e.g. firebreaks. Clearing that will result from the change in use is explained in section 16.6 Glossary of terms of SDAP State Code 16 Native Vegetation Clearing.
Environmentally Relevant Activity	
8	Details

Name	AMCOR QUARRIES & CONCRETE PTY LTD (Amcor)
Environmental authority	EPPR00424513
Lot / Plan	Lot 1RP616642
Proposal	It is proposed to: • extend the extraction area.

Amendment

Based on the information provided Amcor will need to either:

- submit an application to amend environmental authority EPPR00424513 to authorise the extension of the extraction area; or
- submit a development application for a Material Change of Use (MCU) to undertake the concurrence ERA under the *Planning Act 2016*.

The Department of Environment and Science will need confirmation from the State Assessment Referral Agency (SARA) and local council that a development application for a MCU to undertake ERA 16(2)(b) is not required in order to progress any application to amend an environmental authority.

Limits of currently approved activity

Please note, an environmental authority can only approve an activity to the extent contained within a previously approved application for an activity. If an environmental authority is silent on a matter, and this matter was not included in a previously approved application for an activity, then the matter is not authorised.

This relates to environmental authority EPPR00424513 in that, while the environmental authority may be silent on the size of the extraction area, this does not mean the proposed expansion of the extraction area is authorised.

Amcor would need to demonstrate to the Department of Environment and Science that the proposed expansion has been approved as part of a previous application, in order to not require the submission of the abovementioned MCU application or amendment application for the proposed expansion.

Lot 44SP140243

Please also note that Lot 44SP140243 is not listed on EA EPPR00424513, so extraction and screening activities are not authorised on this location.

Information to provide in an amendment application

As outlined in sections 125 of the *Environmental Protection Act 1994*, an application will need to include:

- a description of the environmental values (both onsite and offsite) likely to be affected by the proposed activity
- details of any emissions or releases likely to be generated by the proposed activity
- a description of the risk and likely magnitude of impacts on the environmental values
- details of the management practices proposed to be implemented to prevent or minimise adverse impacts
- details of how the land the subject of the application will be rehabilitated after the relevant activity
- a description of the proposed measures for minimising and managing waste generated by the relevant activity

- details of any site management plan (i.e. associated with contaminated land) that relates to the land that is the subject of the application.

Technical guidelines
Technical guidelines have been developed to outline what information to include in an application where impacts related to air, land, noise, water or waste have been identified. These are available at: https://www.business.qld.gov.au/business/running/environment/licences-permits/applying-environmental-authority/technical-information-requirements

Environmental Values at the Proposed Site
Environmental values that will need to be considered in your application include:

1. Wetland lines throughout the Site and the wetland located to the southeast of the Site.
2. Matters of State Environmental Significance (MSES)
   a) The Stanwell Power Station Nature Refuge located to the west of the Site;
   b) The Rainbow Mountain Nature Refuge located to the south and to the west of the Site;
   c) MSES protected wildlife habitat located throughout most of the Site;
   d) MSES regulated vegetation [category B – endangered or of concern] located in the southeast corner of the Site and bordering the southeast boundary of the Site;
   e) MSES regulated vegetation [category C – endangered or of concern] located to the southeast of the Site;
   f) MSES regulated vegetation [category R – GBR riverine] located throughout the Site;
   g) MSES regulated vegetation [watercourse];
   h) MSES regulated vegetation [essential habitat] located throughout most of the Site; and
   i) MSES regulated vegetation [defined watercourse] running through the southeast of the Site.

The below additional information would be beneficial to include in the application:

- The proposed extractive area and site layout with adequate coordinates for the boundaries in either GDA94 or in kmz/kml files. Site layout should include stockpiling, crushing, screening, office areas etc.

Model operating conditions
'Model Operating Conditions' have been developed for ERA 16. If you apply to amend EA EPPR00424513, you may want to propose updating the conditions of your environmental authority to the model operating conditions (where applicable), and justify these updates (for example - "the current condition has the same intent as the model condition"). Updating to the Model Conditions is the responsibility of the holder of the EA.

When MSES likely to be impacted - Offsets
It has been identified that the proposed extension to the extraction area may impact upon the following Matters of State Environmental Significance (MSES):

a) The Stanwell Power Station Nature Refuge located to the west of the Site;
b) The Rainbow Mountain Nature Refuge located to the south and west of the Site;
c) MSES protected wildlife habitat located throughout most of the Site;
d) MSES regulated vegetation [category B – endangered or of concern] located in the southeast corner of the Site and bordering the southeast boundary of the Site;
e) MSES regulated vegetation [category C – endangered or of concern] located to the southeast of the Site;
f) MSES regulated vegetation [category R – GBR riverine] located throughout the Site;
g) MSES regulated vegetation [watercourse];
h) MSES regulated vegetation [essential habitat] located throughout most of the Site; and
i) MSES regulated vegetation [defined watercourse] running through the southeast of the

	Site. Where MSES are identified you must demonstrate how the development avoids adverse impacts on MSES. Where this is demonstrated to be not reasonably possible, you must then demonstrate how impacts on MSES have or will be minimised and mitigated. If following these considerations, the proposed activity is likely to have an impact on the MSES, you must undertake a 'significant residual impact' assessment If the assessment finds that the proposed activities are likely to result in a significant residual impact on a MSES, you must provide information as to why an offset is a suitable outcome (i.e. that a suitable offset is possible). An environmental offset may then be required through a condition of approval. Please refer to the following guideline for further information on significant residual impacts: https://environment.des.qld.gov.au/__data/assets/pdf_file/0017/90404/significant-residual-impact-guide.pdf

This advice outlines aspects of the proposed development that are relevant from the jurisdiction of SARA. This advice is provided in good faith and is:

- based on the material and information provided to SARA;
- valid for a period of 9 months unless a change in legislation or policy occurs that affects the advice
- not applicable if the proposal is changed from that which formed the basis of this advice.

This advice does not constitute an approval or an endorsement that SARA supports the development proposal. Additional information may be required to allow SARA to properly assess the development proposal when a formal application has been lodged.

If you require further information please contact Carl Porter, Principal Planning Officer, on 07 4924 2913 or via email RockhamptonSARA@dsdmip.qld.gov.au who will be pleased to assist.

Yours sincerely



Anthony Walsh
Manager Planning

Development details	
Proposal:	Development permit for a Material Change of Use (MCU) for an extractive industry (quarry) Development permit for Operational Works for native vegetation clearing
Street address:	294 Hume Road, Kabra; 397 Power Station Road, Stanwell
Real property description:	1RP616642; 44SP140243
SARA role:	Referral agency
Assessment Manager:	Rockhampton Regional Council
Assessment criteria:	State Development Assessment Provisions (SDAP): - State code 2: Development in a railway environment - State Code 6: Protection of state transport networks

Development details	
	- State code 16: Native vegetation clearing - State code 22: Environmentally relevant activities
Existing use:	Quarry
Relevant site history:	On 11 September 2002, the Fitzroy Shire Council issued a development permit for Extractive Industry with concurrence agency conditions (not supplied by applicant) applied by the Environmental Protection Agency. An Environmental Authority (reference: EPPR00424513) issued by the Department of Environmental and Science ('DES') is currently held for the site on lot 1RP616642 for ERA 16(2)(b) & ERA13(3)(b)

CURRENT TITLE SEARCH
NATURAL RESOURCES, MINES AND ENERGY, QUEENSLAND

Request No: 35237426
Search Date: 16/10/2020 14:21 Title Reference: 30518048
Date Created: 24/08/1983

Previous Title: 30421167
30421168

REGISTERED OWNER Interest

Dealing No: 720216998 19/08/2020

EVAN RUSSELL ACTON 3/4
KIM ELLEN ACTON 1/4

AS TENANTS IN COMMON

ESTATE AND LAND

Estate in Fee Simple

LOT 1 REGISTERED PLAN 616642
Local Government: ROCKHAMPTON

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 30075074 (POR 36V)
Deed of Grant No. 30195113 (POR 38V)
(POR 51V)

2. EASEMENT IN GROSS No 601126786 (C510818) 24/12/1985
BURDENING THE LANDD
TO QUEENSLAND ELECTRICITY COMMISSION
OVER EASEMENTS A AND C ON RP613929

3. TRANSFER No 703436833 06/07/1999 at 15:50
EASEMENT IN GROSS: 601126786 (C510818)
QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED
A.C.N. 078 849 233

4. LEASE No 718740660 11/05/2018 at 11:24
EXTRACT QUARRIES PTY LTD A.C.N. 617 558 004
OF LEASES B AND C ON SP275202
TERM: 01/03/2017 TO 31/01/2027 OPTION NIL

5. CHANGE OF NAME DLNG (COMPANY) No 718740670 11/05/2018 at 11:25
LEASE: 718740660
AMCOR QUARRIES & CONCRETE PTY LTD A.C.N. 617 558 004

6. MORTGAGE No 720217010 19/08/2020 at 11:44
NATIONAL AUSTRALIA BANK LIMITED A.C.N. 004 044 937

ADMINISTRATIVE ADVICES - NIL

CURRENT TITLE SEARCH
NATURAL RESOURCES, MINES AND ENERGY, QUEENSLAND

Request No: 35237426
Search Date: 16/10/2020 14:21 Title Reference: 30518048
Date Created: 24/08/1983

UNREGISTERED DEALINGS - NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

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Requested By: D-ENQ SAI GLOBAL

CURRENT TITLE SEARCH
NATURAL RESOURCES, MINES AND ENERGY, QUEENSLAND

Request No: 35253741
Search Date: 19/10/2020 15:56 Title Reference: 50381096
Date Created: 22/01/2002

Previous Title: 50070886

REGISTERED OWNER

Dealing No: 705284667 21/12/2001

STANWELL CORPORATION LIMITED A.C.N. 078 848 674

ESTATE AND LAND

Estate in Fee Simple

LOT 44 SURVEY PLAN 140243
Local Government: ROCKHAMPTON

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10392216 (POR 44)

2. EASEMENT IN GROSS No 601387005 (C611688N) 07/02/1991
BURDENING THE LAND
TO WATER RESOURCES COMMISSION
OVER EASEMENT K ON RP809630

3. VESTING No 706095708 06/11/2002 at 13:30
EASEMENT IN GROSS: 601387005 (C611688N)
SUNWATER A.B.N. 17 020 276 523

4. EASEMENT IN GROSS No 700603106 12/04/1995 at 11:46
burdening the land to
QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION
over
EASEMENTS A AND B ON RP886593,C ON RP886594,D ON RP890296,
E ON RP890297,F ON RP890298,G ON RP890299,H ON RP890301,
N ON RP890300 AND EASEMENTS P AND M ON RP890304

5. TRANSFER No 703627181 13/10/1999 at 08:02
EASEMENT IN GROSS: 700603106
QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED
A.C.N. 078 849 233

6. NATURE CONSERVATION NOTING No 701542334 11/09/1996 at 08:58
all or part of the within land has been declared a Nature
Refuge under the Nature Conservation Act 1992

CURRENT TITLE SEARCH
NATURAL RESOURCES, MINES AND ENERGY, QUEENSLAND

Request No: 35253741
Search Date: 19/10/2020 15:56 Title Reference: 50381096
Date Created: 22/01/2002

EASEMENTS, ENCUMBRANCES AND INTERESTS

7. EASEMENT IN GROSS No 714018106 19/08/2011 at 12:43
   burdening the land
   QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED
   A.C.N. 078 849 233
   over
   EASEMENT R ON SP242400

8. EASEMENT IN GROSS No 719010464 26/09/2018 at 09:20
   burdening the land
   QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED
   A.C.N. 078 849 233
   over
   EASEMENT Q ON SP303301

ADMINISTRATIVE ADVICES

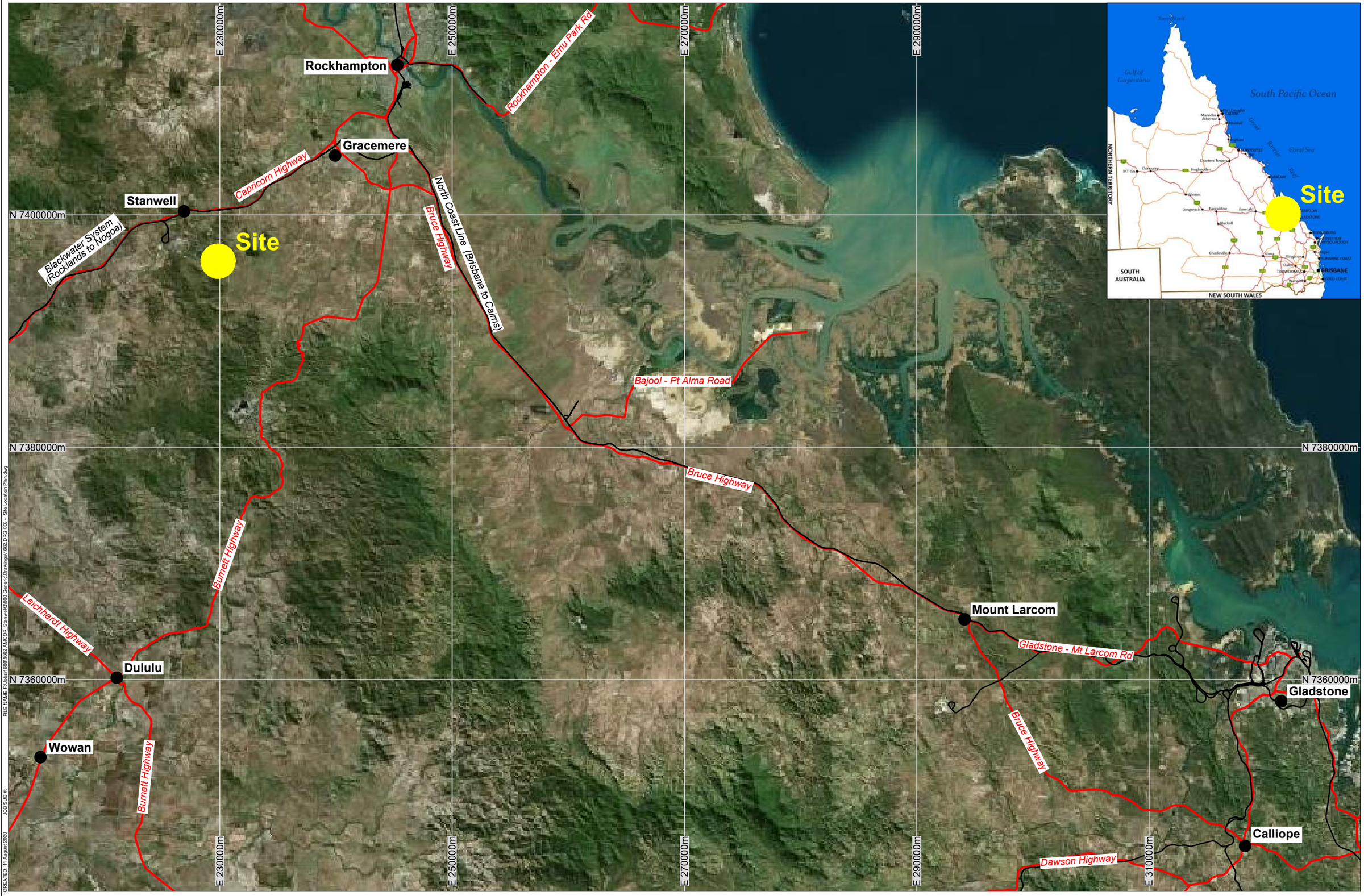
Dealing	Type	Lodgement Date	Status
712734183	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	16/09/2009 15:28	CURRENT
715710331	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	11/04/2014 11:36	CURRENT

UNREGISTERED DEALINGS - NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

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Requested By: D-ENQ SAI GLOBAL



CREATED: 11 August 2020 JOB SUB #: FILE NAME:F:\Jobs\1600\1662 AMCOR Stanwell\2000 Generic\Drawings\1662.DRG.008 - Site Location Plan.dwg

REV	DESCRIPTION	DATE	BY

Data Sources:
Photography: Digital Globe
Topography:
Cadastre: QSC_Rockhampton Regional DCDB Extract_2020-08-09 (publication)
Ecosystem:
Other:

THESE DESIGNS AND PLANS ARE COPYRIGHT AND ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART OR TO BE USED ON ANY PROJECT WITHOUT THE WRITTEN PERMISSION OF GROUNDWORK PLUS PTY LTD. ABN: 13 609 422 791

Legend:
- Project Site
- Population Centre
- State Existing Railway
- State Controlled Roads

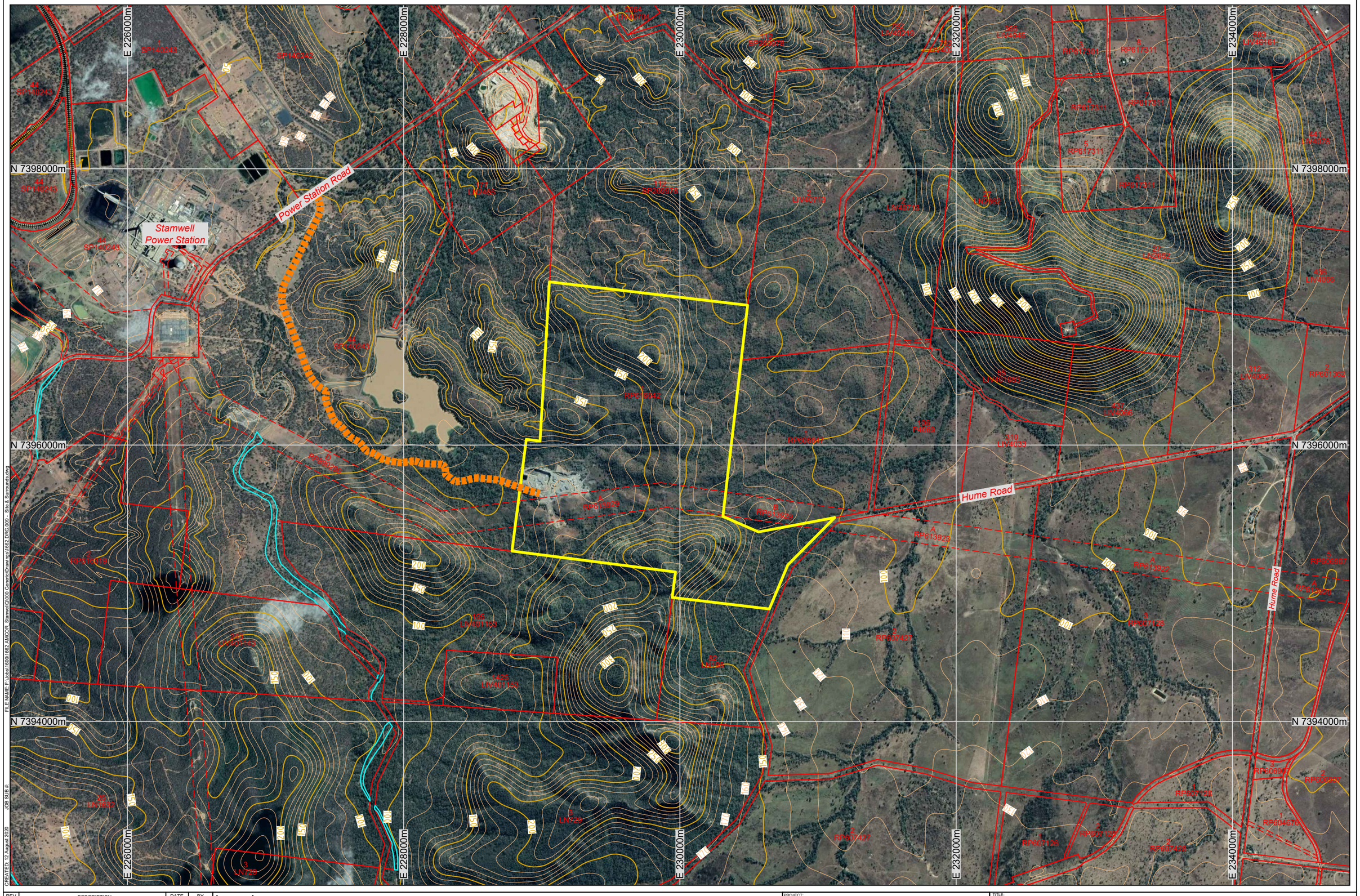
PROJECT: Stanwell Quarry Extension

CLIENT: AMCOR Quarries & Concrete

TITLE: Site Location Plan

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:300,000 When Printed On A3 — 0 6kms
DRAWING NUMBER: 1662.DRG.008
REVISION:
DATE: 11 August 2020 DRAWN: MRESCAR
PRINTED: 11 August 2020 CHECKED: SLYONS
DATUM: HORIZONTAL / VERTICAL / ZONE MGA / / 56


E 226000m
E 228000m
E 230000m
E 232000m
E 234000m
N 7398000m
N 7396000m
N 7394000m
Power Station Road
Stamwell
Power Station
Hume Road
Hume Road
RP613942
RP613920
RP613922
RP607627
RP607628
RP607626
RP607629
RP606997
RP606998
RP604574
RP617311
RP617312
RP617313
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Setout Points Proposed Extraction

Point	Latitude	Longitude
1	S23° 31' 34.60"	E150° 21' 15.53"
2	S23° 31' 37.68"	E150° 20' 45.12"
3	S23° 31' 35.75"	E150° 20' 40.20"
4	S23° 31' 30.47"	E150° 20' 41.05"
5	S23° 31' 29.04"	E150° 20' 44.10"
6	S23° 31' 28.12"	E150° 20' 45.17"
7	S23° 31' 27.79"	E150° 20' 46.80"
8	S23° 31' 27.80"	E150° 20' 48.22"
9	S23° 31' 28.90"	E150° 20' 55.27"
10	S23° 31' 26.42"	E150° 21' 02.52"
11	S23° 31' 29.37"	E150° 21' 04.94"
12	S23° 31' 27.95"	E150° 21' 06.97"
13	S23° 31' 27.22"	E150° 21' 18.04"
14	S23° 31' 34.82"	E150° 21' 16.96"

FILE NAME: F:\Jobs\1662\1662 AMCOR Stanwell\2000 General\Drawings\1662.DRG.015 - Site Layout Plan.dwg
JOB SUB #
CREATED: 29 July 2021

REV	DESCRIPTION	DATE	BY
1	Proposed Extraction Area revised	06/10/2020	MR

Data Sources:
Photography: Google Earth Image_Captured 2020-June-24
Topography: QSC_Rockhampton Reg_10m LiDAR Contours_2019-08-26 (publication)
Cadastre: QSC_Rockhampton Regional DCDB Extract_2020-08-09 (publication)
Ecosystem:
Other:

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Legend:
- Site Boundary
- Cadastral Boundary
- Easement Boundary
- Proposed Extraction Area
- Haul Road

PROJECT: Stanwell Quarry Extension

CLIENT: AMCOR Quarries & Concrete

TITLE: Site Layout Plan

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SCALE: 1:2,000 When Printed On A3 (0 — 40m)
DRAWING NUMBER: 1662.DRG.015
REVISION:
DATE: 29 July 2021 DRAWN: MRESCAR
PRINTED: 29 July 2021 CHECKED: SLYONS
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / / 56

Setout Points (Extraction Area)

ID	Easting	Northing
1	E 229,862.74m	N 7,395,728.60m
2	E 229,001.44m	N 7,395,618.11m
3	E 228,860.86m	N 7,395,674.71m
4	E 228,881.84m	N 7,395,837.62m
5	E 228,967.81m	N 7,395,883.18m
6	E 228,997.54m	N 7,395,912.14m
7	E 229,043.49m	N 7,395,923.29m
8	E 229,083.82m	N 7,395,923.79m
9	E 229,284.65m	N 7,395,893.63m
10	E 229,488.84m	N 7,395,973.56m
11	E 229,559.18m	N 7,395,884.23m
12	E 229,615.98m	N 7,395,928.96m
13	E 229,929.88m	N 7,395,957.09m
14	E 229,903.40m	N 7,395,722.81m

Proposed Extraction Area (25.89 Ha)

Hume Road

REV	DESCRIPTION	DATE	BY
1	Site boundary , Essential Habitat and Watercourses	29-07-21	MR

Data Sources:
Photography: Google Earth Image_Captured 2020-June-24
Topography: QSC_Rockhampton Reg_10m LiDAR Contours_2019-08-26 (publication)
Cadastre: QSC_Rockhampton Regional DCDB Extract_2020-08-09 (publication)
Ecosystem: QSC_Vegetation Mgmt Regional Ecosystems Map V11.0_2021-04-08 (publication)
Other:

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Legend:

- Site Boundary
- Cadastral Boundary
- Easement Boundary
- Proposed Extraction Area
- Haul Road
- Watercourse and Drainage Feature

Vegetation Management

- Vegetation Containing Endangered Regional Ecosystems
- Vegetation Containing of Concern Regional Ecosystems
- Vegetation that is a Least Concern Regional Ecosystems
- Essential Habitat

PROJECT: Stanwell Quarry Extension

CLIENT: AMCOR Quarries & Concrete

TITLE: Regulated Vegetation Management Map

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SCALE: 1:10,000 When Printed On A3 — 0 — 200m
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JOB SUB #
CREATED: 29 July 2021

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STANWELL QUARRY

SITE BASED MANAGEMENT PLAN

Prepared for:
AMCOR Quarries and Concrete Pty Ltd

Date:
April 2020

File Ref:
documents / 2490_610_001

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ATTACHMENTS

Attachment 1 Annual Environmental Performance Review
Attachment 2 Spill Response Protocol

1. Introduction

1.1 Background

AMCOR Quarries and Concrete Pty Ltd ('AMCOR') operates the extractive industry operation on land at 294 Hume Road, Stanwell QLD 4702, properly described as Lot 1 RP616642 (herein referred to as the 'site'). The site is operated in accordance with Environmental Authority ('EA') EPPR00424513, administered by the Department of Environment and Science, for the following prescribed Environmentally Relevant Activities ('ERAs') in accordance with the *Environmental Protection Regulation 2019* (EP Reg):

a) ERA 16 Threshold (2)(b) - Extracting, other than by dredging, in a year, the following quantity of material – more than 100,000 tonnes per year, but not more than 1,000,000 tonnes per year.
b) ERA 16 Threshold (3)(b) - Screening, in a year, the following quantity of material – more than 100,000 tonnes per year but not more than 1,000,000 tonnes per year.

This Site Based Management Plan ('SBMP') describes the site operations, the potential environmental impacts of these activities, and how any potential impacts may be mitigated or managed to achieve acceptable environmental outcomes of for the activity.

1.2 Site Details

Table 1 – Site Details Summary provides a summary of the site location details.

Table 1 – Site Details Summary

Location	294 Hume Road, Stanwell QLD 4702
Access	Via Hume Road, connecting to Power Station Road
Real Property Description	Lot 1 RP616642
Tenure	Freehold
Local Authority	Rockhampton Regional Council

1.3 Activity Overview

The operation comprises of a hard rock quarry. Quarry products produced from the resource may include, but are not limited to; crushed rock, road base and sub base pavement materials, asphalt and sealing aggregates, concrete aggregates (fine and coarse) and other products such as armour rock, ballast, bedding materials, manufactured sand, erosion control rock, processed fill, landscape materials, and drainage media. Plate 2 – Conceptual Diagram of On-site Extractive Operations provides an illustration of the standard quarrying methodologies utilised at the site.

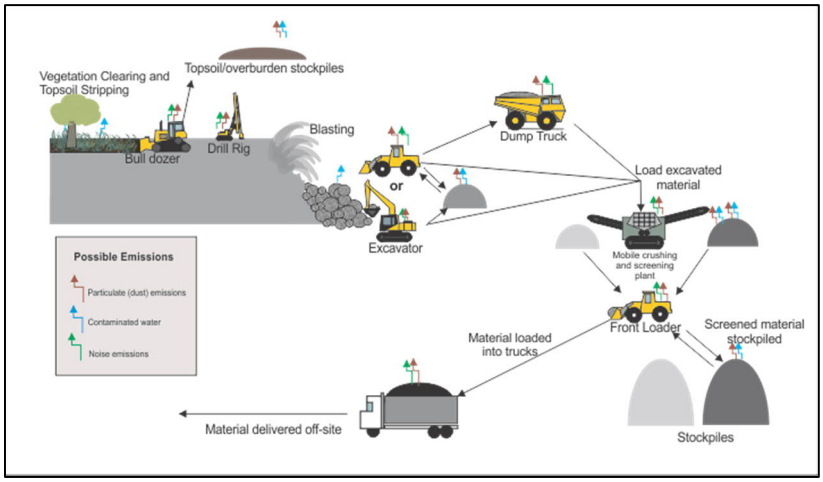


Plate 1 – Conceptual Diagram of On-site Extractive Operations

Site operations typically include the following basic elements:

- Clearing of vegetation and stripping of topsoil and overburden material via mechanical means (i.e. bulldozer or excavator). Stockpiling topsoil and overburden for later use as; saleable general fill, incorporation into onsite rehabilitation works where required, or use in construction of stormwater controls (e.g. perimeter banks, bunds).
- Drilling and blasting the exposed underlying rock from the developed quarry benches to reduce the material into a manageable size for relocation of the materials to the quarry pit or bench below, ready for processing.
- Transferring raw material from the quarry face or pit floor to the crushing and screening plant/stockpile area using off-road haul truck(s) loaded by an excavator or front-end loader.
- Processing of raw materials using crushing and screening plant.
- Stockpiling the final products using a front-end loader and/or off-road haul truck before the material is sold and loaded into highway haul trucks for transportation off-site for use.
- Rehabilitating disturbed areas progressively once the terminal quarry benches had been established.

The extent of the extraction is variable depending on the extent and distribution of the raw materials across the site.

1.4 Hours of Operation

The proposed hours of operation for the quarry are:

- 6am to 6pm, Monday to Saturday.
- No operations on Anzac Day, Good Friday, Easter Monday, and Christmas Day.

1.5 Plant and Equipment

A mobile crushing and screening plant will be utilised within the quarry footprint area, generally aligning with the progressive site workings. Ancillary equipment may be required on an 'as needed' basis (e.g. sweepers, water trucks and fuel trucks). The number of plant and equipment deployed on-site is anticipated to vary according to project demands. Types of major plant and equipment deployed on-site may include, but is not limited to:

- Bulldozer.
- Grader.
- Excavator.
- Off-road haul trucks.
- Front-end loader.
- Mobile processing crushing and screening plant.
- Haul road trucks.

Machinery repairs and maintenance will be carried out on-site where practicable within a designated workshop area, where practicable. Stationary equipment will be generally serviced in the field unless it is practical for parts to be dismantled and transported to the workshop. Consumables (e.g. tyres, oils and greases) will be supplied by contractors and removed (including associated packaging) for disposal off-site in accordance with the requirements of the prevailing legislation and the local authority on a regular basis. A site office, crib room, amenities room and weighbridge will be established on the site. Diesel shall be stored on-site within a bunded or self-bunded portable tank with a lockable pump bay that complies with Australian Standard AS1940. It is anticipated that mobile machinery will be refuelled at a designated refuelling area, however mobile machinery may at times be refuelled at locations where they are working in the field.

1.6 Purpose of the SBMP

The SBMP must document how AMCOR will:

1. identify potential risks to the environment from the activity during routine operations, closure and an emergency
2. establish and maintain control measures that minimise the potential for environmental harm
3. ensure plant, equipment and measures are maintained in a proper and effective condition
4. ensure plant, equipment and measures are operated in a proper and effective manner
5. ensure that staff are trained and aware of their obligations under the *Environmental Protection Act 1994*
6. ensure that reviews of environmental performance are undertaken at least annually.

1.7 Relevant Legislation

In Queensland, the EP Act is the principal legislation for protecting the environment. The EP Act was assented on 1 December 1994 and was proclaimed on 1 March 1995. The object of the EP Act is to:

> "*protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development)".*

The EP Act imposes a General Environmental Duty on corporations, government departments and individuals, in order to meet the primary objective (Section 319 of the EP Act). The duty relates to the notion that everyone must take all reasonable and practicable measures to prevent or minimise environmental harm. The general environmental duty is extracted below for reference:

319 General environmental duty

1) *A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm (the general environmental duty).*

   Note— See section 24 (3) (Effect of Act on other rights, civil remedies etc.).

2) *In deciding the measures required to be taken under subsection (1), regard must be had to, for example—*
   a) *the nature of the harm or potential harm; and*
   b) *the sensitivity of the receiving environment; and*
   c) *the current state of technical knowledge for the activity; and*
   d) *the likelihood of successful application of the different measures that might be taken; and*
   e) *the financial implications of the different measures as they would relate to the type of activity.*

In addition, the EP Act states that it is an offence to cause environmental nuisance (Section 440 of the EP Act), material environmental harm (Section 438 of the EP Act), serious environmental harm (Section 437 of the EP Act), and it is an offence to contravene a condition of an Environmental Authority (Section 430 of the EP Act).

2. Policies and Procedures

2.1 Organisational Structure and Responsibilities

Roles and key responsibilities are outlined in Table 2 – Roles and Responsibilities.

Table 2 – Roles and Key Responsibilities

Role	Key Responsibilities
Quarry Manager	• Perform duties as directed and required. • Manage performance and success of projects. • Risk management. • Compliance. • Liaise with site principle contractors. • Monitor, review and report periodically on performance. • Ensure that project resources are adequate to meet contract commitments, environmental performance standards and health and safety requirements. • Develop and approve environmental management documents such as this SBMP, as well as Health & Safety Plans, site-specific policies and operational procedures. • Establish and maintain the above-mentioned documents and ensure they are understood by all site personnel and effectively implemented. • Monitor, review and report periodically on the implementation of the SBMP and externally certified management systems and ensure they continue to be effective, suitable and improved. • Monitor, review and report projects performance measures/indicators for key aspects such as environment, financial, safety, quality and client satisfaction. • Manage and record all customer complaint/dispute issues. • Daily supervision of staff. • Train staff in their duties. • Compliance with the requirements of all relevant Acts, Regulations, Standards and Codes, which includes system improvements, compliance with policies & procedures. • Compliance with the requirements of the SBMP.
Supervisor	• Perform duties as directed and required. • Produce quality quarry products from the mobile operation to customer requirements and within the licence conditions and the SBMP. • Making accurate daily entries into the mine record and appoint a delegate to make those entries in the absence of the quarry manager. • Managing inductions and keeping induction registration records. • Authorisation of machines to operate on site. • Risk management. • Ensure compliance with contractor policies & procedures. • Liaise with site contractors (if applicable). • Monitor, review & report periodically on the progressive performance of the quarry against the approved budget and related company objectives. • Ensure that project resources are adequate and appropriate to meet safety, environmental and contract commitments. • Monitor, review and report periodically on the implementation of the SBMP and externally certified management systems and ensure they continue to be effective, suitable and improved. • Monitor, review and report projects performance measures/indicators for key aspects such as environment, financial, safety, quality, and client satisfaction. • Manage and record all customer complaints, disputes and community feedback. • Daily supervision of staff. • Train staff in their duties. • Compliance with the requirements of all relevant Acts, Regulations, Standards and Codes, which includes system improvements, compliance with policies & procedures. • Compliance with the requirements of the SBMP.

Role	Key Responsibilities
Health Safety Environment (HSE) and Environment Advisor	• Perform duties as directed and required. • Risk management. • Ensure operations are within the licence conditions and the SBMP. • Ensure compliance with principle contractor policies & procedures. • Assess, develop and monitor risk mitigation and controls for tasks performed at the site. • Maintain staff training and assessment records. • Conduct site audits and inspections as required. • Perform incident investigations as required. • Review legislative changes. • Review, develop and amend processes to environmental and safety related documentation and communicate the changes to all applicable workers via the most practicable. • Compliance with policies and procedures, legislation, standards and codes of practice. • Compliance with the requirements of the SBMP.
Operational Site Teams	• Perform duties as directed and required. • Identify and assess hazards as they occur. • Comply with the principal contractor policies & procedures. • Compliance with policies and procedures, legislation, standards and codes of practice. • Compliance with the requirements of the SBMP.

2.2 Staff Training

All site personnel, including contractors, are to be inducted on the environmental management requirements for the site and informed of the environmental management objectives and specifics of the SBMP as well as obligations under the *Environmental Protection Act 1994*. Training may include awareness on impact minimisation measures, operational practices, maintenance measures, reporting, and individual responsibilities.

Site personnel are to be made aware of penalties if conditions of approval are breached and reporting requirements for incidents involving environmental nuisance and/or harm in accordance with the relevant environmental legislation. A record of all employee training is to be maintained on-site.

2.3 Communication

Communication must take place regarding environmental matters at the site between operational personnel, management and external stakeholders.

Internal communication mechanisms relating to environmental matters and potential impacts, objectives and targets, training and awareness, complaints and incidents, and suggestions for improvement may include, but shall not be limited to:

- Self-assessments and audits
- Action requests, memos, noticeboards, etc.
- Environmental incident reporting
- Environmental compliance monitoring and reporting
- Inductions and environmental awareness training
- Toolbox talks or verbal advice
- Weekly construction meetings
- Management reviews
- Site meetings.

All external communications are to be undertaken by management. External communication mechanisms for environmental matters may include:

- Formal and informal correspondence with the administering authorities
- Formal correspondence with interest groups
- Community complaints and enquiries.

2.4 Complaint Recording and Response

All complaints received are to be reported to the Quarry Manager or delegate immediately.

The following details are to be recorded upon receipt of any complaint:

- Date and time the complaint was received.
- Name and contact details for the complainant when provided and authorised by the complainant.
- Nature of the complaint.
- Investigation undertaken.
- Conclusions formed.
- Actions taken.

The Quarry Manager is to liaise with any complainants to discuss the nature of the complaint and to determine a suitable resolution. Initial contact with the complainant is to be made within 24 hours of the complaint being received to initiate a resolution to the matter.

The administering authority may request additional monitoring to investigate any complaint of environmental nuisance received directly by the administering authority. A copy of any monitoring results must be provided within 14 days to the administering authority.

2.5 Incident Response Procedure

2.5.1 Overview

The objective of this Incident Response Procedure is to ensure that any breaches of the EA, or incidents and activities that cause or threaten to cause serious or material environmental harm, are reported, investigated, and addressed to prevent recurrence or remedy harm caused. A diagrammatic overview of incidents procedure is provided in Plate 4 – Incidents Response Procedure Overview. The Quarry Manager will be responsible for ensuring that all employees at the site are familiar with the procedure for incidents procedures.

Environmental harm is defined under the EP Act as:

- any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance.
- may be caused by an activity—
    - whether the harm is a direct or indirect result of the activity; or
    - whether the harm results from the activity alone or from the combined effects of the activity and other activities or factors.



Plate 2 – Incident Notification Process

2.5.2 Incident Awareness

When an employee becomes aware of an event resulting in the breach of an EA condition, or an incident with actual or potential environmental harm implications, the employee must report the incident to the Quarry Manager or delegate immediately (no more than 24 hours after becoming aware of the incident).

To demonstrate regard for the general environmental duty, all possible breaches of the EA should be reported to the administering authority as soon becoming aware of the matter, even if there is uncertainty as to whether a condition of the EA has been breached.

2.5.3 Notification

If the matter is an emergency, call 000.

Under Sections 320 to 320G of the EP Act, persons have a duty to notify the administering authority within 24 hours of becoming aware of any incidents or activities that cause or threaten to cause serious environmental harm or material environmental harm. In addition, the EA requires that any breach of a condition of the EA is reported no more than as soon as practicable within 24 hours of becoming aware of the breach.

The Quarry Manager must notify the administering authority via telephone and email within 24 hours of becoming aware of the incident. The contact details of the administering authority for notification purposes are as follows:

- Department of Environment and Science
- Phone: 1300 130 372 and select option 2 (during business hours of 8.30am to 5.00pm)
- Email: PollutionHotline@des.qld.gov.au

2.5.4 Investigation

All incidents are to be investigated. The investigations should include:

- determining what activities were being carried out at the time of the incident and any equipment involved.
- identifying whether equipment or activities on-site were the cause of the incident.
- determining what potential actions may be carried out to resolve the matter and/or minimise the likelihood of further impacts.

Corrective action is to be implemented and an assessment conducted to determine what actions are to be taken to remedy the matter and/or prevent a similar incident from occurring.

Where monitoring is required to investigate an incident (e.g. water quality monitoring), a suitably qualified person as identified under the EP Act must be engaged to perform the monitoring and interpret any results.

2.6 Record Keeping

All environmentally relevant documentation, including approvals, corporate policies, procedures, forms, records, and reports required to be kept as per this SBMP or conditions of approval shall be available at the approved premises for a period of at least five (5) years, and must be available for inspection by an authorised person.

2.7 Monitoring

Any monitoring required by a condition of approval or by this SBMP must be carried out by a suitably qualified person(s) as defined under the EP Act.

All instruments, equipment and measuring devices used for measuring or monitoring in accordance with a condition of approval must be calibrated and appropriately operated and maintained.

All analyses of samples must be carried out by a laboratory that has National Association of Testing Authorities (NATA) certification, or an equivalent certification, for such analyses.

2.8 Periodic Review of Environmental Performance and Continual Improvement

The SBMP has been prepared for implementation as a continuous improvement program. The following key aspects of this SBMP ensures continuous improvement results from the implementation of this SBMP.

Commitment and Environmental Policy
Senior management are to commit to environmental performance through ensuring regulatory compliance, prevention of actual or potential environmental harm, and continuous improvement.

Planning
The SBMP identifies environmental aspects associated with the site operations, such as potential impacts. SBMP outlines the environmental objectives, performance targets and management measures for each environmental aspect.

Implementation
Implementation of the SBMP outlines responsibilities, training requirements, communication procedures, and contingency plans. Blackwater Quarries will be responsible for ensuring additional implementation requirements are in place, such as preparing monitoring documentation, following procedures, and establishing communication pathways.

Checking
Monitoring of compliance will determine whether the environmental objectives are being met and will identify non-compliances. Additional actions that will check environmental performance include audits and review of the SBMP.

Review
Reviews of environmental performance are to be undertaken at least annually and should review:

- any monitoring data produced under the conditions of the EA and any trends.
- any non-compliances reported, or complaints received, over the preceding 12 months and actions taken to achieve compliance / resolution.
- changes in site approval documents, legislation and standards.
- the suitability of the SBMP against the site development.
- any measures that are proposed to be implemented over the coming 12 months to improve the environmental performance of the site.

A template for annual environmental performance reviews is included as Attachment 1 – Annual Environmental Performance Review.

The outcomes of all environmental performance reviews must be communicated to senior management for actioning as required.

The Quarry Manager may commission updates to this SBMP as required to ensure that it meets the operational needs of the site. Periodic review of the SBMP will ensure continuous improvement of the site environmental performance through adaption of management strategies to meet the changing needs of the site.

3. Potential Environmental Risks

3.1 Risk Assessment Methodology

The purpose of this assessment is to determine the site activities requiring ongoing management to reduce residual risk of potential environmental impacts. This risk assessment methodology has been adopted from the process for risk management as set out in Clause 6 of the *AS ISO 31000:2018 Risk management - Guidelines* (Standards Australia 2018). The risk assessment follows the following process:

- Risk identification (source activity and potential impact).
- Risk Analysis (risk level = likelihood x consequence).
- Risk Evaluation (commentary on risk / management measures proposed).

The risk treatment outlines the controls / management measures that can be implemented to reduce the level of risk to as low as reasonably possible.

The risk analysis qualitatively estimates the level of risk based on the likelihood of an environmental impact or event occurring (Table 3 – Definitions of Likelihood), and the consequences of the occurrence (Table 4 – Definitions of Consequence).

Table 3 – Definitions of Likelihood

Rating	Descriptor	Score
Rare	May occur only in exceptional circumstances	1
Unlikely	Could occur but doubtful	2
Possible	Might occur at some time in the future	3
Likely	Will probably occur	4
Almost Certain	Is expected to occur in most circumstances	5

Table 4 – Definitions of Consequence

Rating	Descriptor	Score
Negligible	Impacts not requiring any treatment or management action	1
Minor	Nuisance or insignificant environmental harm requiring minor management action	2
Moderate	Serious environmental impacts, readily manageable at low cost	3
Major	Substantial environmental impacts, manageable but at considerable cost and some disruption	4
Severe	Severe environmental impacts with major consequent disruption and heavy cost	5

The consequence and likelihood scores are plotted on the risk vs consequence matrix (Table 5 – Risk Assessment Matrix) and the final risk level assigned is a product of the likelihood and consequence scores, which equals the magnitude of the impacts. The higher the risk score, the higher the priority is for management.

Table 5 – Risk Assessment Matrix

Likelihood		Consequence				
		Negligible	Minor	Moderate	Major	Severe
		1	2	3	4	5
Almost Certain	5	5 Medium	10 High	15 High	20 Very High	25 Very High
Likely	4	4 Low	8 Medium	12 High	16 High	20 Very High
Possible	3	3 Low	6 Medium	9 Medium	12 High	15 High
Unlikely	2	2 Low	4 Low	6 Medium	8 Medium	10 High
Rare	1	1 Low	2 Low	3 Low	4 Low	5 Medium

Table 6 – Indicative Management Option for Each Risk Assessment Rating describes the possible actions required for each risk assessment rating.

Table 6 – Indicative Management Option for Each Risk Assessment Rating

Risk Rating	Risk Rating Scores	Indicative Management Option
Very High	17 – 25	Manage by implementing site management and emergency procedures, plant design controls and regular monitoring.
High	10 – 16	Manage by implementing site management procedures, specific monitoring and may require some operation/plant design controls.
Medium	5 – 9	Manage by implementing specific monitoring or response procedures.
Low	1 – 4	Manage by routine procedures, unlikely to need specific application of resources.

3.2 Environmental Risk Assessment

Activities associated with the ERAs which have the potential to cause environmental harm and/or nuisance and the potential impacts have been identified and tabulated. The inherent risk of the impacts occurring, and the residual risk following the implementation of management strategies, has then been assessed. Refer to Table 7 – Identification of Potential Impacts and Risks for the assessment.

Table 7 – Identification of Potential Impacts and Risks

Environmental Aspect	Potential Environmental Impact	Source Activity	Inherent Risk Rating [a]	Evaluation and Risk Treatment	Residual Risk Rating [b]
Table notes: (a) "Inherent risk" is the level of risk that exists if the impacts go unmitigated. (b) "Residual risk" is the risk that remains after implementation of the proposed control / management measures.					
Air	Emission of dust to air impacting nearby sensitive receptors.	• Clearing of vegetation and topsoil / overburden ahead of the extraction activity. • Stockpiling of topsoil and overburden. • Extraction and handling of raw materials (e.g. transfer of materials, processing, blending, stockpiling, transportation). • Vehicle movements on unsealed roads and access tracks.	3 x 3 = 9 (Medium)	The nearest dwelling external to the site boundary is approximately 4.5 km north west of the site within the township of Stanwell. The Stanwell power station is located approximately 2.85 km north west of the site. The inherent risk is conservatively scored medium, based on possible potential occurrence of dust nuisance, and moderate consequence. To assist with air quality management for the residences on-site, the Air Quality Management Plan (refer to Section 4.1 – Air Quality Management Plan) has been developed to manage the potential impacts to air from the site activities. Provided AMCOR implement the measures outlined in the SBMP, and comply with the requirements of the EA conditions, the likelihood of an incident occurring is decreased and the residual risk score is reduced to low.	2 x 2 = 4 (Medium)
Water	Release of contaminated water to the receiving environment.	• Clearing of vegetation and topsoil / overburden ahead of the extraction activity. • Stockpiling of topsoil and overburden. • Extraction and handling of raw materials (e.g. transfer of materials, processing, blending, stockpiling, transportation).	4 x 3 = 12 (High)	The site is within the catchment of the Stanwell Water Supply Dam. The site drains to an ephemeral gully, stream order 1 watercourse, which enters the Stanwell Water Supply Dam approximately 1.0 km downstream. Due to the nature of extractive industry activities, stormwater runoff will interact with disturbed areas created through the development of the site. Unmanaged, the inherent risk of release of potentially contaminant laden	3 x 3 = 9 (Medium)

Environmental Aspect	Potential Environmental Impact	Source Activity	Inherent Risk Rating [a]	Evaluation and Risk Treatment	Residual Risk Rating [b]
Table notes: (a) "Inherent risk" is the level of risk that exists if the impacts go unmitigated. (b) "Residual risk" is the risk that remains after implementation of the proposed control / management measures.					
				stormwater is scored high. Section 4.2 – Water Quality Management Plan provides measures for capture and treatment of surface waters to ensure that the potential for contaminant release is minimised. Provided the measures outlined in the SBMP are implemented, and the EA conditions are complied with, the environmental outcomes of the EA are likely to be achieved. Residual risk is reduced to a lower level as the likelihood of an incident occurring is reduced through the implementation of the management measures nominated in the SBMP. The consequence remains the same, which results in a residual risk rating of medium. A medium residual risk requires ongoing implementation of specific monitoring or response procedures. These are documented in Section 4.2 – Water Quality Management Plan. Review of Acid Sulfate Soils (ASS) mapping has confirmed that the site is not located within, or near, an area where ASS have previously been identified, or within a prospective land zone containing ASS. No management measures are considered necessary.	
Groundwater	Release of contaminants to groundwater.	• Extraction of raw materials. • Storage and handling of hydrocarbons and chemicals (i.e. fuels, lubricants, herbicides and other chemicals).	4 x 3 = 12 (High)	There is a single on-site bore recorded on the Department of Natural Resources, Mines and Energy (DNRME) registered bore records. Review of data for this bore (registered number 122140), approximately 200 m north of the extraction area, shows that the standing water level in the bore as of 29 May 2020 was -7.50 m Below Ground Level. The bore was likely installed adjacent to a stream, suggesting groundwater levels would be elevated. There is a potential for interception of groundwaters during the site development. Unmitigated, the potential for indirect impacts through release of contaminants to the receiving environment which may be transported to groundwaters is scored high, based on a probable likelihood and a moderate consequence.	3 x 3 = 9 (Medium)

Environmental Aspect	Potential Environmental Impact	Source Activity	Inherent Risk Rating [a]	Evaluation and Risk Treatment	Residual Risk Rating [b]
Table notes: (a) "Inherent risk" is the level of risk that exists if the impacts go unmitigated. (b) "Residual risk" is the risk that remains after implementation of the proposed control / management measures.					
				Section 4.2 – Water Quality Management Plan includes measures for capture and treatment of surface waters that may interact with potential contaminants at the site that could impact groundwater. The SBMP also includes a Hydrocarbon and Chemical Management Plan that provides measures for management of other potential contaminants, refer to Section 4.3 – Hydrocarbon and Chemical Management Plan for details. Provided AMCOR implement the SBMP, potential for indirect impacts to groundwater will be reduced, and the residual risk is reduced to a lower score based on a decreased likelihood of an impact event occurring, However, the risk is reduced to medium, which will require ongoing management through the implementation of the SBMP.	
Noise	Noise nuisance for nearby noise sensitive receptors.	• Clearing of vegetation and topsoil / overburden ahead of the extraction activity. • Stripping and stockpiling of topsoil, subsoils and overburden. • Extraction and handling of materials (e.g. transfer of materials, stockpiling, transportation). • Screening and processing of the materials. • Vehicle movements on unsealed roads and access tracks. • Plant and equipment use, including reverse beepers. • Radio / UHF use. • Alarms.	2 x 3 = 6 (Medium)	The nearest dwelling external to the site boundary is approximately 4.5 km north west of the site within the township of Stanwell. The Stanwell power station is located approximately 2.85 km north west of the site. To assist with noise mitigation for the residences on-site, the Noise Management Plan (refer to Section 4.4 – Noise Management Plan) has been developed to manage the potential impacts. Residual risk is reduced to a lower level as the likelihood of an incident occurring is reduced through the implementation of the SBMP. Provided AMCOR implement the measures outlined in the SBMP, and comply with the requirements of the EA conditions, the residual risk score is reduced to low based on a reduced likelihood of impacts.	2 x 2 = 4 (Low)
	Air blast overpressure and ground borne vibration nuisance for	Blasting activities undertaken for fragmentation of larger rock units.	3 x 3 = 9 (Medium)	To assist with noise mitigation for the residences on-site, Section 4.5 - Blasting Management Plan provides measures to manage potential impacts to sensitive receptors as a result of blasting activities at the site. Only suitably experienced and qualified blasting personnel shall be employed or contracted to provide blasting services.	2 x 3 = 6 (Medium)

Environmental Aspect	Potential Environmental Impact	Source Activity	Inherent Risk Rating [a]	Evaluation and Risk Treatment	Residual Risk Rating [b]
Table notes: (a) "Inherent risk" is the level of risk that exists if the impacts go unmitigated. (b) "Residual risk" is the risk that remains after implementation of the proposed control / management measures.					
	nearby sensitive receptors[4].			Provided that the Blasting Management Plan is implemented, and only suitably qualified persons are engaged to undertake blasting activities at the site, the residual risk is reduced to a lower level as the likelihood of an incident occurring is reduced. The residual risk rating is scored medium, which will require ongoing management measure to be applied as outlined in the SBMP.	
Waste	Improper disposal of wastes (general and regulated waste).	Storage and disposal of residual waste (i.e. general and regulated waste).	3 x 4 = 12 (High)	The type of wastes that may be generated at the quarry include, but are not necessarily limited to, the following: • Regulated wastes (e.g. batteries, oil filters, waste oil/hydrocarbons and containers, oil/water emulsions and tyres). • Scrap metal and used or faulty parts and equipment. • General waste such as food waste, packaging and consumables. • Green waste. The Waste Management Plan (WMP) included as Section 4.6 – Waste Management Plan details measures for management of waste at the site, with reference to the requirements of the *Waste Reduction and Recycling Act 2011* (WRR Act). Provided AMCOR implement the measures outlined in the SBMP, the residual risk of a potential incident involving waste is reduced. The consequence remains the same, resulting in a medium residual risk. The residual risk will require ongoing management in accordance with the SBMP.	2 x 4 = 8 (Medium)
Land	Release of hydrocarbons and fuels to land.	Storage and handling of chemicals and fuels on-site.	4 x 4 = 16 (High)	The inherent risk of handling fuels and chemicals is high due to an increased likelihood of potential release if handling and storage activities are unmanaged.	3 x 3 = 9 (Medium)

Environmental Aspect	Potential Environmental Impact	Source Activity	Inherent Risk Rating [a]	Evaluation and Risk Treatment	Residual Risk Rating [b]
Table notes: (a) "Inherent risk" is the level of risk that exists if the impacts go unmitigated. (b) "Residual risk" is the risk that remains after implementation of the proposed control / management measures.					
				Section 4.3 – Hydrocarbon and Chemical Management Plan provides management measures for handling and storage of hydrocarbons and chemicals to reduce the potential impacts to land associated with spills and/or leaks. Provided AMCOR implements the measures outlined in the SBMP, the residual risk is reduced to a lower level as the likelihood and consequence of an incident occurring is reduced through the implementation of the management measures outlined in the SBMP. The residual risk is scored medium, and ongoing management in accordance with the SBMP will be required to ensure risk is as low as reasonably possible.	
	Spread of invasive plants (weeds) at the site.	• Vehicle movements into and out of the site • Site development of extraction areas (particularly clearing of vegetation)	4 x 3 = 12 (High)	The inherent risk of weed spread without appropriate management and controls is scored high due to a probable likelihood. The consequence is scored moderate, as potential impacts may extend beyond the boundary of the property to adjacent productive rural land Section 4.7 – Weed Management Plan provides management measures for control of weeds at the site. Provided AMCOR implements the measures outlined in the SBMP, the residual risk is reduced to a lower level as the likelihood and consequence are reduced. The residual risk is scored medium, and ongoing management in accordance with the SBMP will be required to ensure risk is as low as reasonably possible.	3 x 3 = 9 (Medium)

Environmental Aspect	Potential Environmental Impact	Source Activity	Inherent Risk Rating [a]	Evaluation and Risk Treatment	Residual Risk Rating [b]
Table notes: (a) "Inherent risk" is the level of risk that exists if the impacts go unmitigated. (b) "Residual risk" is the risk that remains after implementation of the proposed control / management measures.					
	Post-closure implementation and management of the site rehabilitation.	Failure of the operator to undertake rehabilitation of the disturbance area at the cessation of the activities.	2 x 4 = 12 (High)	Section 4.8 – Rehabilitation Management Plan outlines general rehabilitation requirements for the site. The life of the operation is anticipated to extend into the foreseeable future, therefore, a more detailed rehabilitation and closure plan may be required prior to cessation of the extractive industry use of the site to reflect a land use relevant to the planning scheme in place at the time. Residual risk is reduced to a lower level as the likelihood of failure of progressive and/or final rehabilitated landforms is reduced through the implementation of the SBMP and compliance with the EA conditions. With future planning and implementation of successful rehabilitation, the likelihood of failure is reduced, and the residual risk is scored medium based on a decreased likelihood of failure.	3 x 4 = 8 (Medium)

4. Environmental Management Plans

4.1 Air Quality Management Plan

Objective	The activity will be operated in a way that protects the environmental values of air.
Purpose	This Air Quality Management Plan has been prepared to control potential air quality impacts occurring as a result of land disturbance necessary for the site operations. The *Environmental Protection Act 1994* and the associated *Environmental Protection (Air) Policy 2019* provide the legislation and regulatory controls for management of emissions to the atmosphere.
Performance Targets	• Odours or airborne contaminants which are noxious or offensive or otherwise unreasonably disruptive to public amenity or safety must not cause nuisance to any sensitive place or commercial place. • No environmental nuisance complaints in relation to air quality impacts (i.e. unmitigated emissions of dust, odours or light) associated with the site activities. • In the absence of set performance targets, dust and particulate matter emissions must not exceed the following concentrations at any sensitive place or commercial place: o dust deposition of 120 milligrams per square metre per day (120 mg/m^2/day) , when monitored in accordance with Australian Standard (*AS) 3580.10.1 Methods for sampling and analysis of ambient air: Method 10.1: Determination of particulate matter - Deposited matter—Gravimetric method* (Standards Australia 2013) (or more recent editions), or o a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM_{10}) suspended in the atmosphere of 50 micrograms per cubic metre (50 mg/m^3) over a 24 hour averaging time, when monitored in accordance with *AS 3580.9.6 Methods for sampling and analysis of ambient air— Determination of suspended particulate matter - PM10 high volume sampler with size selective inlet – Gravimetric method* (Standards Australia 2015) (or more recent editions) or any other method approved by the administering authority.
Strategies / mitigation measures	<u>General</u> • Ensure sufficient on-site water supply is available for dust suppression. • Apply good housekeeping practices. <u>Work Areas / Trafficable Areas</u> • Limit high dust generating activities (e.g. removal of topsoil/overburden and blasting) to periods of favourable weather conditions. • Dampen down (approx. rate of 2 litres/m^2/hour) work areas, access roads and other hardstand areas by water spraying when visual surveillance indicates excessive dust generation. • Restrict vehicle movements to designated routes to the extent practicable. • Pave and/or seal high trafficable access roads and/or tracks, where practicable. • Maintain road surfaces in good condition. • Prevent and clean up any raw material / product spillages or dust accumulation on driveways or sealed roads. <u>Processing Plant</u> • Use water sprays and/or dust collection systems at transfer points. • Use shielding and/or windbreaks where possible. • Maintain equipment in accordance with the original equipment manufacturers' specifications. • Dampen materials prior to transport/handling. <u>Stockpiles</u> • Limit the height of any stockpiles to <6m, where practicable. • Regularly water sand and aggregate stockpiles to keep down dust emissions.

4.1 Air Quality Management Plan

	Transport of Materials • Ensure that incoming and outgoing truckloads of materials are covered during transport. • Ensure that truck bodies and trailers leaving the premises are clean, focusing on draw bar and tail gate, to prevent material spillages causing dust nuisance and being tracked onto external roads.
Monitoring	Dust and Particulate Monitoring Daily visual surveillance must be undertaken by all employees to ensure dust generation on-site is controlled appropriately. Dust and particulate monitoring must be undertaken at the request of the administering authority in accordance with the relevant conditions of the EA. Dust and particulate monitoring must be undertaken to investigate any complaint of environmental nuisance caused by dust and/or particulate matter. When requested to undertake monitoring, monitoring results are to be provided to the administering authority following completion of the monitoring event. Monitoring shall be carried out at a place(s) relevant to the potentially affected dust sensitive place and must include: • for a complaint alleging dust nuisance, dust deposition • for a complaint alleging adverse health effects caused by dust, the concentration per cubic metre of particulate matter with an aerodynamic diameter of less than 10 µm (PM_{10}) suspended in the atmosphere over a 24-hr averaging time. Monitoring is to be undertaken by a suitably qualified person in accordance with Australian Standard *AS3580.10.1 – Determination of particulate matter – Deposited mater – Gravimetric method* (Standards Australia 2013) (or most recent edition). The monitoring results must be provided within 10 business days to the administering authority upon its request.
Contingency Plan	If air quality monitoring (dust and/or particulate matter) determines an exceedance of the Performance Targets, the Quarry Manager may engage the services of a suitably qualified person to determine additional management strategies to mitigate impacts. Additional air quality monitoring should be undertaken as necessary to determine the effectiveness of any additional management strategies employed in response to exceedance of EA limits.

4.2 Water Quality Management Plan

Objective	The activity will be operated in a way that protects the environmental values of water.
Purpose	This Water Quality Management Plan has been prepared to control potential environmental impacts occurring as a result of land disturbance necessary for the site operation.
Performance Targets	• Stormwater contaminated by the activity must be managed to minimise or prevent any adverse impacts on the values of the receiving environment. • Erosion and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment. • The stormwater runoff from disturbed areas, generated by (up to and including) a 24 hour storm event with an average recurrence interval of 1 in 5 years must be retained on site or managed to remove contaminants before release. • In addition, the release to waters must not: 1) have any other properties at a concentration that is capable of causing environmental harm 2) produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other visually objectionable matter. • An uncontrolled release from site should only occur under exceptional circumstances such as the site receiving a rainfall event larger than a 24-hour storm event with an ARI of 1 in 5 years. • Settled / treated Stormwater that is controlled released from the site is to minimise or precent any adverse impacts on the receiving environment.
Strategies / mitigation measures	Sediment Basins and Stormwater Management Devices • Storage capacity of sediment basins / water storages is to be reinstated within five days from receiving the design rainfall event. • Site features such as extraction pits and drop cuts may be utilised as on-site storage (EHP 2014). • Sediment basins must be designed to capture sediment up to a depth of 0.5 m within the base of the pit. An indicator marker is to be installed at the base of the pit to identify the level of sediment accumulated. • All captured waters are to be reused on site where possible for dust control or irrigation. • Sediment is to be removed to return the sediment basins to full capacity on a periodic basis or when the sediment level is approaching the sediment storage capacity. This material is to be excavated and managed in line with the management measures detailed in Erosion and Sediment Control (section below). • Coagulants or flocculants may be used to treat stormwaters in a sediment basin; however, there use must be in accordance with the manufacturer's dosage specifications to ensure that they do not cause environmental harm to receiving waters. • General site litter is to be cleaned up on a weekly basis, prior to anticipated heavy rainfall and after significant rainfall events (>25 mm / 24hours) (IECA n.d.). • Sediment must not be disposed of in a manner that will create an erosion or pollution hazard. • Sediment basins are to be inspected during the following periods: o Quarterly as a minimum. o After each rain event, particularly focusing on the entry and exit points, if damage has occurred then make necessary repairs. o Prior to, and immediately after, periods of sustained site shut down (i.e. greater than 30 days). Erosion and Sediment Control Site Management • Waters from clean catchments are to be diverted away from disturbed areas of the site. • Allow stormwater to pass through the site in a controlled manner and at non-erosive flow velocities up to the specified design storm discharge. • Minimise soil erosion resulting from rain, water flow and/or wind.

- Minimise adverse effects of sediment runoff, including safety issues.
- Prevent, or at least minimise, environmental harm resulting from work-related soil erosion and sediment runoff.
- Oil water separators are to be installed in workshop areas as required to remove oils, greases and hydrocarbons from waters.
- Where possible, areas associated with storage and handling of hydrocarbons such as refuelling areas are to be sealed and roofed.

Land Clearing

- Ensure a buffer is maintained between the Mackenzie River and the extraction are at all times.
- No land clearing shall be undertaken unless preceded by the installation of adequate drainage and sediment control measures, unless such clearing is required for the purpose of installing such measures, in which case, only the minimum clearing required to install such measures shall occur.
- Land clearing to be undertaken in conjunction with development of each stage of the quarry.
- Bulk tree clearing must occur in a manner that minimises disturbance to existing ground cover (organic or inorganic).
- Disturbance to natural watercourses (including bed and banks) and their associated riparian zones must be limited to the minimum practicable extent and be accompanied by the relevant approval.
- Prior to land clearing, areas of protected vegetation, and significant areas of retained vegetation must be clearly identified for the purposes of minimising the risk of unnecessary land clearing.
- All reasonable and practicable measures must be taken to minimise the removal of, or disturbance to, those trees, shrubs and ground covers (organic or inorganic) that are intended to be retained.
- All land clearing must be undertaken in accordance with the Development Approval and applicable legislation.
- Land clearing is limited to the minimum practicable extent during those periods when soil erosion due to wind, rain or surface water is possible.

Site Access

- Site exit points must be appropriately managed with rumble pads or wheel washdown facilities to minimise the risk of sediment being tracked onto sealed, public roadways.

Stockpile Management

- A minimum buffer distance of 50 m must be maintained between stockpile areas and the high banks of any watercourse, lake or wetland.
- Long term stockpiles such as topsoil and overburden should be vegetated to achieve a minimum 70% coverage. Examples of species that are suitable for short to medium term stabilisation include Burgundy bean (*Macroptilium bracteatum*), Butterfly pea (*Clitoria ternatea*), Perennial forage sorghum, 'Silk' sorghum (Sorghum), Sulla (*Hedysarum coronarium*).
- Stockpiles of erodible material that have the potential to cause environmental harm if displaced must be adequately protected from wind, rain, concentrated surface flow and excessive upslope stormwater surface flows.
- Stockpiles are to be located at least five metres from any retained vegetation or concentrated drainage lines.
- Stockpiles are to be located up-slope of an appropriate sediment control system.
- A suitable flow diversion system must be established immediately up-slope of a stockpile.
- Prior to wet season (December to February) overburden / soil stockpiles should be managed or located out of concentrated stormwater flow paths.

Drainage Control

- Wherever reasonable and practicable, stormwater runoff entering the site from external areas, and non-sediment laden (clean) stormwater runoff entering a work area or area of soil disturbance, must be diverted around or through that area in a manner that minimises soil erosion and the contamination of that water for all discharges up to the specified design storm discharge.
- All reasonable and practicable measures must be implemented to control flow velocities in such a manner that prevents soil erosion along drainage paths and at the entrance and exit

- Wherever reasonable and practicable, "clean" surface waters must be diverted away from sediment control devices and any untreated, sediment-laden waters.

Sediment Control

- Sediment is to be trapped within the site, and as close as practicable to its source.
- All reasonable and practicable measures must be taken to prevent, or at least minimise, the release of sediment from the site.
- Sediment control devices must be de-silted and made fully operational as soon as reasonable and practicable after a sediment-producing event, whether natural or artificial, if the device's sediment retention capacity falls below 75 % of its retention capacity.
- Materials, whether liquid or solid, removed from sediment control devices during maintenance or decommissioning, must be disposed of in a manner that does not cause ongoing soil erosion or environmental harm.

Site Maintenance

- All erosion and sediment control measures, including drainage control measures, must always be maintained in proper working order during their operational lives.
- Sediment removed from places of sediment deposition must be relocated away from sensitive environment to ensure it does not cause ongoing soil erosion or environmental harm.

Monitoring

Water Quality Monitoring

- In the absence of prescribed water monitoring in the EA, monitoring the parameters and at the frequencies specified in the EA, extracted for ease of reference in Table 8 – Contaminant Release Limits.
- Water quality monitoring must be in accordance with the methods prescribed in the current edition of the administering authority's *Monitoring and Sampling Manual* (DES 2018).
- Water samples must be representative of the general condition of the water body or sediments.
- All determinations must employ analytical practical quantification limits of sufficient sensitivity to enable comparisons to be made against water quality objectives/triggers/limits relevant to the water or sediment quality characteristic.
- All monitoring devices must be calibrated and maintained according to the manufacturer's instruction manual.

Table 8 – Contaminant Release Limits

Quality Characteristics	Maximum Release Limit	Monitoring Frequency
pH	6.5 – 8.5	• Prior to any controlled release of waters; and/or • Daily during release
Suspended Solids	≤50 mg/L	
Dissolved Oxygen	≥6.0 mg/L	
Hydrocarbons	No slick or other visible evidence of oil or grease, scum, litter or other visually objectionable matter.	

Visual Inspections

A summary schedule of the various inspections, performance criteria and responses that shall be performed on site is shown in Table 9 – Visual Inspection Schedule for Stormwater Control Devices.

Contingency Plan

Visual inspections may also identify non-compliances may be identified.

After any incident involving a non-compliant release of waters or failure of stormwater management devices, the source/cause is to be immediately located. The following provides some examples of common scenarios and the required responses:

	• Excessive sediment build-up on-site – collect and dispose of material, then amend up-slope drainage and/or erosion control measures as appropriate to reduce further occurrence (IECA n.d.). • Severe or excessive rill erosion – investigate cause, control up-slope water movement, re-profile surface, cover dispersive soils with a minimum 100 mm layer of non-dispersive soil, and stabilise with erosion control measures and vegetation as necessary (IECA n.d.). • Sediment control failure – replace and monitor more frequently. Regular failures may mean that the sediment control location, alignment or installation may need to be amended (IECA n.d.). • Scour / erosion of bunds will be required to be stabilised (IECA n.d.). • Poor vegetation growth or soil coverage – plant new vegetation and/or mulch as required (IECA n.d.). • Elevated suspended solids – flocculate and retest (IECA n.d.). • pH – add appropriate treatment and appropriate rates to correct pH (IECA n.d.). All non-compliant release of waters from site must be notified to the administering authority, and an investigation conducted to identify appropriate action to resolve the issue to the fullest practicable extent. Refer to Section 2.5 – Incident Response Procedure of this SBMP for details regarding reporting of incidents.

Table 9 – Visual Inspection Schedule for Stormwater Control Devices

Visual Inspection	Minimum Frequency	Performance Criteria	Response
Drainage lines including catch drains, contour drains and diversions.	Quarterly, and prior to and following rainfall events.	• Erosion in areas adjacent to water conveyancing structures.	• Eroded areas shall be rip rapped as soon as practicable.
		• Overtopping of water conveyancing structures (identified by the scouring of the drain batters perpendicular to the direction of flow).	• The drain shall be cleaned of sediments and rip rap replaced to the original design specifications. • Rehabilitation with grasses in the catchment of the drain may be required to reduce sediment loadings of runoff.
Potential sediment storage capacity of grit traps, sediment traps and water storage areas.	Quarterly or following major rainfall events.	• Storage capacity maintained at >75%.	• Sediment/grit shall be removed from the structure.
			• Recycle excavation pit water to ensure that adequate free storage is maintained for the collection and holding of runoff.
Waste containers.	Quarterly.	• Waste is stored in appropriate containers. • Waste receptacles labelled.	• Ensure waste material is stored and disposed of properly.
Spill response stations.	Quarterly and following use.	• Equipment is properly maintained.	• Maintain equipment. • Replace used equipment.
Maintenance / refuelling area.	Quarterly.	• Fuel, oil spills.	• Clean up fuel spills and investigate source.
		• Contractor maintenance.	• Maintain contractor maintenance records.
		• Fuel storage integrity maintained.	• Investigate and repair potential leaks.

4.3 Hydrocarbons and Chemical Management Plan

Objective	The activity is operated in a way that protects the environmental values of land, air and water including soils, subsoils, landforms and associated flora and fauna.
Purpose	The Hydrocarbons and Chemicals Management Plan has been prepared to control the potential for spills or leaks from chemicals and hydrocarbons associated with the site activities.
Performance Targets	• No land contamination from the site activity that would require registration on the Contaminated Land Register (CLR). • No serious spills of oils, greases, fuels or other hazardous chemicals. • No preventable release of hydrocarbons and chemicals to the environment.
Strategies / Mitigation Measures	<u>General</u> • Any chemical handling and storage must be designed and installed in accordance with the most recent edition of Australian Standard (AS) *1940 - The storage and handling of flammable and combustible liquids* (Standards Australia 2017), as a minimum. • Maintain the chemical and fuel storage areas in a neat and tidy condition. • Safety Data Sheets (SDS) of chemicals used on site shall be kept in a register at the site office. • Chemicals and fuels in containers of greater than 15 litres must be stored within a secondary containment system. • Bunding must be constructed of material which is impervious to the material being stored. • Bunds are to be kept in good condition (e.g. no cracks, gaps or leaks) • Roofed storage facilities are to be provided where possible. • Stormwater captured within bunding is to be removed as soon as practicable and disposed of as contaminated water (if required). • Empty hydrocarbon and chemical containers are to be stored with closures in place on hardstand or within a bunded area. • A collection sump must be provided in the floor of the bunding to facilitate the removal of liquids. • Refuelling, equipment maintenance and cleaning of vehicles is to be undertaken within a designated area such as hardstand or sealed area, capable of capturing and containing contaminants. • Spills are to be cleaned up immediately with appropriate spill kits. Spillages must not be cleaned up in a way that releases wastes, contaminants or other materials to any stormwater drainage systems, roadside gutters or waters. • All new employees are to be inducted on the use of handling of chemicals used on-site. <u>Spill Kits</u> • Maintain appropriate spill kits and personal protective equipment at locations known to all employees (e.g. refuelling locations, chemical storage facilities, mobile equipment). • Ensure employees are familiar with, and trained in, the use of proper spill clean-up procedures and always maintain a copy of the procedures at the approved place. • Undertake regular spill kit inventory checks to ensure sufficient materials and supplies are available in the event of a spill. <u>Disposal</u> • Hydrocarbon contaminated materials are to be appropriately disposed of at a licensed facility. • If the material is a Regulated Waste (as defined under the legislation) it must be transported and disposed of by a licensed contractor. • Oily waste materials, including liquid hydrocarbons, should be segregated from general wastes for disposal off-site by a licensed contractor. • Records are to be kept on disposal of waste for all regulated waste materials.

Monitoring	Areas where handling of hydrocarbons and chemicals occur (e.g. refuelling or minor on-site servicing) shall be regularly inspected by the Quarry Manager. All employees will be responsible for the safe day to day handling, use and temporary storage of chemicals being used on-site.
Contingency Plan	The spill response protocol included as Attachment 2 – Spill Response Protocol provides general guidance on the actions to be taken in the event of a spill. If a release of contaminants occurs as a result of on-site operations and it is likely to cause serious or material environmental harm, the administering authority must be notified, and an investigation conducted to identify appropriate action to resolve the issue to the fullest practicable extent. Refer to Section 2.5 – Incident Response Procedure of this SBMP for details regarding reporting of incidents. In the event of an incident involving hydrocarbons or chemicals, the cause of the incident must be investigated, and a review of management practices must be undertaken to determine any potential for improvement to prevent a recurrence of the incident. Remediation of land contamination may be required in the event of more serious incidents; however, AMCOR is to consult with a suitably qualified person to determine the nature and extent of any contamination remediation process.

4.4 Noise Management Plan

Objective	The activity will be operated in a way that protects the environmental values of the acoustic environment.
Purpose	This Noise Management Plan has been prepared to control potential nuisance impacts that may occur as a result of noise associated with the site operations.
Performance Targets	• No environmental nuisance complaints relating to the site operations. • Noise generated by the activity must not cause environmental nuisance to any sensitive place or commercial place. • Generation of substantial low frequency noise is not permitted.
Strategies / mitigation measures	• Operate the site within the approved hours of operation, being: o 6am to 6pm. o No operations on ANZAC Day, Good Friday, Easter Monday and Christmas Day. • Use broadband reversing alarms where possible to avoid potential nuisance associated with tonal characteristics of traditional reverse beepers. • Ensure a site layout that enables product delivery and handling in such a way that reduces the need for reversing. • Fixed engines, pumps and compressors are to be enclosed where practicable. • Ensure all site equipment, machinery and vehicles are serviced in accordance with the original equipment manufacturers' specifications as a minimum. • Ensure all modern mobile plant (e.g. front-end loaders, excavators, off-road trucks) is fitted with effective exhaust silencers. • Equipment and machinery are to be shut down when not in use. • Unnecessary revving of mobile or stationary motors and engines is to be avoided. • Ensure that equipment at the site is used for the intended purpose. • Ensure that any extraneous noises are rectified. • Maintain haul roads and hardstand surfaces in good condition (e.g. free of potholes, rills and product spillages) and with suitable grades. • Avoid the use of compression braking on product delivery trucks entering the site.
Monitoring	The Quarry Manager must: • ensure regular surveillance of the site to qualitatively assess noise generation from the operations. • initiate a noise survey when requested by the administering authority, or as otherwise deemed necessary, to investigate a noise complaint. Any monitoring must be in accordance with the most recent version of the administering authority's *Noise Measurement Manual* (EHP 2013a). When required by the administering authority, noise monitoring must be undertaken, and the results notified within 14 days to the administering authority. Monitoring must include: • LAeq, adj, T • Background noise (Background) as LA 90, adj, T • MaxLpA,T • the level and frequency of occurrence of any impulsive or tonal noise • atmospheric conditions including wind speed and direction • effects due to extraneous factors such as traffic noise • location, date and time of recording. Noise monitoring to determine compliance with the EA is to be carried out at an appropriate noise monitoring point on-site. It is recommended that the administering authority is consulted to determine the most appropriate location for the monitoring station.

Contingency Plan	Any compliant received regarding noise nuisance at a sensitive receptor must be recorded and investigated by the Quarry Manager in accordance with Section 2.5 – Incident Response Procedure. If noise monitoring determines an exceedance of the approved limits, the Quarry Manager may engage the services of a suitably qualified person to determine additional management strategies to mitigate impacts. If the administering authority considers that the noise monitoring results indicate environmental nuisance is being caused from the site activities, the following must take place: • address the complaint including the use of appropriate dispute resolution if required; or • immediately implement noise abatement measures so that emissions of noise from the ERA do not result in further environmental nuisance. Additional noise monitoring must be undertaken where necessary to determine the effectiveness of the additional management strategies.

4.5 Blasting Management Plan

Objective

The activity will be operated in a way that protects the environmental values of the acoustic environment.

Purpose

Blasting will be required to fragment rock to a manageable size that can be transported and fed into the on-site crushing and screening plant.

Blasting practice has the potential to generate excessive noise and vibration impacts that may cause nuisance for sensitive receptors. This Blasting Management Plan is prepared to assist in management of blast impacts associated with ground-borne vibration and overpressure at the site.

Section 440ZB of the *Environmental Protection Act 1994* provides the legislation for blasting.

Performance Targets

Blasting activities must not exceed the limits for peak particle velocity and air blast specified in the EA (extracted as Table 10 – Blasting Limits for reference) when measured at any sensitive place or commercial place.

Table 10 – Blasting limits

Blasting Criteria	Blasting Limits
Airblast Overpressure	115 dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time.
Ground vibration peak particle velocity	5mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time.

Associated monitoring requirements:

1. Monitoring must be in accordance with the most recent editions of the administering authority's 'Noise and Vibration from Blasting' guideline and Noise Measurement Manual and any relevant Australian standard.
2. All monitoring devices must be correctly calibrated and maintained.
3. Any monitoring of noise emissions from the activity must be undertaken when the activity is in operation.

Strategies / mitigation measures

The following control measures may be implemented to assist in mitigating potential noise nuisance from blasting associated with the site activities:

- Only suitably experienced and qualified blasting personnel shall be employed or contracted to provide blasting services.
- Blasting must be carried out in accordance with the current edition of the administering authority's *Guideline: Noise and vibration from blasting* (EHP 2016) and with *AS 2187.2 Explosives - Storage and use - Use of explosives* (Standards Australia 2006).
- Unless prior approval is obtained from the administering authority; blasting is only permitted during the hours of:
    - 9am to 3pm Monday to Friday.
    - 9am to 1pm on Saturdays.
    - Blasting is not permitted at any time on Sundays or public holidays.
- Handling, transport and use of explosives shall be carried out in accordance with the requirements of *AS 2187.2 Explosives - Storage and use - Use of explosives* (Standards Australia 2006), and the *Mining and Quarrying Safety and Health Act 1999* (MQSH Act) and associated Regulation.
- The maximum instantaneous charge or charge mass per delay will be limited to the lowest possible level.
- A blast plan shall be prepared for each blast, containing blast hole layout, initiation sequence, charging, stemming type and height, charge weight and any other design element, required to inform good blasting practice.
- Blast areas may be dampened down prior to blasting to minimise dispersion of dry and fine materials where practicable, or where it is identified as a source of potential dust nuisance.

4.5 Blasting Management Plan

Monitoring	When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint at any sensitive or commercial place, and the results must be notified within 14-days to the administering authority following completion of monitoring. Monitoring of blasting activities must be undertaken by a suitably qualified person in accordance with the administering authority's guideline *Noise and Vibration from Blasting* (EHP 2016) and the relevant *AS 2187.2 Explosives - Storage and use - Use of explosives* (Standards Australia 2006) (or most recent version). <u>Frequency and Location</u> Monitoring may be generally be conducted around the quarry to confirm that the air blast and ground vibration levels do not exceed the criteria specified. Blasts should be randomly selected or monitored on a fixed schedule (e.g. five continuous blasts). Monitoring must include: • Location of the blast(s) within the mining area (including which bench level). • Atmospheric conditions including temperature, relative humidity and wind speed and direction. • Location, date and time of recording. The method of measurement and reporting of vibration levels must comply with Appendix J of *AS 2187.2 Explosives - Storage and use - Use of explosives*· (Standards Australia 2006). Measurements should be conducted by suitably trained personnel using appropriate equipment. Equipment should be calibrated on a regular basis in accordance with the manufacturer's recommendations or other appropriate standards Where a nuisance complaint regarding air blast overpressure or ground vibration is received, consideration will be given to available monitoring results and locations, and if required or advantageous, a monitor will be installed at an appropriate location for the next five blasts to assess compliance, or when requested by the administering authority. All monitoring and reporting shall be undertaken by a person or body possessing both the qualifications and the experience appropriate to perform the required measurements.
Contingency Plan	Any complaint received regarding nuisance at a sensitive or commercial place caused by blasting activities must be recorded and investigated by the Quarry Manager in accordance with Section 2.4 – Complaint Recording and Response. If blast monitoring determines an exceedance of the approved limits, the Quarry Manager may engage the services of a suitably qualified person to determine additional management strategies to mitigate impacts. If monitoring indicates exceedance of the EA limits, then AMCOR must: • address the complaint including the use of appropriate dispute resolution if required; or • immediately implement vibration abatement measures so that vibration from the activity does not result in further environmental nuisance. Additional blast monitoring must be undertaken where necessary to determine the effectiveness of the additional management strategies.

4.6 Waste Management Plan

Objective	Any waste generated, transported, or received as part of carrying out the activity is managed in a way that protects all environmental values.
Purpose	This Waste Management Plan has been prepared to address the following: • how the waste will be dealt with, including a description of the types and amounts of waste that will be dealt with under each of the waste management practices mentioned in the waste management hierarchy set out in the *Waste Reduction and Recycling Act 2011* (WRR Act) .The hierarchy is as follows: *a) AVOID unnecessary resource consumption* *b) REDUCE waste generation and disposal* *c) RE-USE waste resources without further manufacturing* *d) RECYCLE waste resources to make the same or different products* *e) RECOVER waste resources, including the recovery of energy* *f) TREAT waste before disposal, including reducing the hazardous nature of waste* *g) DISPOSE of waste only if there is no viable alternative.* • procedures for identifying and implementing opportunities to improve the waste management practices employed and opportunities for beneficial reuse. • how often the performance of the waste management practices will be assessed (at least annually). • the indicators or other criteria on which the performance of the waste management practices will be assessed.
Performance Targets	• Implement the WRR Act waste management hierarchy. • Maintain a record of any disposal of trackable wastes in accordance with the EP Reg. • No unlawful disposal of wastes on or off-site. • All waste generated in carrying out the activity must be reused, recycled or removed to a facility that can lawfully accept the waste.
Strategies / mitigation measures	<u>Types of Waste</u> The type of wastes that may be generated at the quarry include, but are not necessarily limited to, the following: • Regulated wastes (e.g. batteries, oil filters, waste oil/hydrocarbons and containers, oil/water emulsions and tyres). • Scrap metal and used or faulty parts and equipment. • General waste such as food waste, packaging and consumables. • Green waste. The amount of waste generated and stored at the site will fluctuate from time to time, and therefore an inventory is to be maintained of the waste volumes (e.g. materials in graveyard). <u>Waste Management Measures according to WRR Hierarchy</u> <u>Waste Avoidance</u> Waste avoidance relates to preventing the generation of waste or reducing the amount of waste generated. Reasonable and practicable measures for achieving waste avoidance may include, but are not necessarily limited to:

- Input substitution (using recyclable materials instead of disposable materials, for example using oil delivered in recyclable steel drums instead of non-recyclable plastic containers).
- Increased efficiency in the use of raw materials, energy, water or land (purchasing consumables in bulk (large containers) rather than in small quantities).
- Improved maintenance and operation of equipment (keep equipment in good working order to reduce wear and overhaul).
- Undertaking an assessment of waste minimisation opportunities from time to time.

Waste Reuse

Waste re-use refers to re-using waste, without first substantially changing its form. Reasonable and practicable measures for reusing waste may include, but are not necessarily limited to:

- Recovering and separating solvents, metals, oil, or components or contaminants and reusing separated solvents for degreasing plant and equipment.
- Applying waste processing fines to land in a way that gives agricultural and ecological benefits (using fine sediments in rehabilitation activities).
- Using overburden for constructing bunds and landforming.
- Reusing silt/sediment on-site to the maximum practicable extent.

Waste Recycling

Waste recycling refers to treating waste that is no longer useable in its present form and using it to produce new products. Reasonable and practicable measures may include, but are not necessarily limited to:

- Recovering oils, greases and lubricants for collection by a licensed oil recycling contractor, recovering, separating and recycling packaging (including paper, cardboard, steel and recyclable plastics).
- Recycling used plant and equipment to the maximum practicable extent.
- Finding alternatives to disposal of non-recyclable materials (using conveyor belts for noise attenuation, mudflaps, ute tray liners).
- Providing suitable receptacles and storage areas for collection of materials for recycling.

Energy Recovery from Waste

This refers to recovering and using energy generated from waste. Due to the scale and type of the operation, energy recovery is not considered viable.

Waste Disposal

This refers to disposing of waste which cannot otherwise be reused, recycled or used for energy recovery. Reasonable and practicable measures may include, but are not necessarily limited to:

- Regulated wastes must be transported and disposed of in accordance with EP Reg.
- Disposal to a licensed waste disposal facility (i.e. landfill or transfer station).
- Approved on-site disposal.

Waste Storage

- Waste storage containers or areas are to be provided and located at safe and convenient locations at the site.
- Each container is to be identified with the type of wastes which may be disposed of in each container.
- Each container or area is to be designed to prevent the escape of materials.

Regulated Waste

Regulated Wastes are defined in the EP Reg. Waste management areas must include a dedicated section for regulated wastes, which must be stored within sealed containers within a bunded area in accordance with Australian Standards and the following minimum requirements:

- All regulated wastes will be transported off-site by a suitably licensed commercial transporter with an ERA 57 Regulated Waste Transport (or equivalent) approval.
- To assist in the collection and transfer of regulated wastes, designated regulated waste bins, drums and skips must be used. Where possible these regulated waste storage containers should be located at the work location where the waste is being generated and then returned to the designated regulated waste storage areas for storage prior to offsite disposal or recycling.
- Dedicated regulated waste storage areas must be provided to prevent the mixing of regulated wastes with other stored material or with incompatible hazard classes. Wastes must only be deposited into designated areas within the applicable storage area.
- Storage areas for regulated wastes must be constructed in accordance with AS *1940 - The storage and handling of flammable and combustible liquids* (Standards Australia 2017) or an equivalent Australian Standard.
- An inventory must be kept and maintained of all regulated waste stored and disposed of.
- Where possible, regulated waste stores must be lockable to prevent access by unauthorised persons.
- As soon as practicable, remove and dispose of all regulated waste to a licensed waste disposal facility or recycling facility using a licenced contractor.
- Medical wastes must be stored in yellow and black biohazard waste bins. Clinical waste must be bagged in yellow bags with biohazard symbols and stored in rigid-walled, leak-proof secondary containers, in a bunded area with an impervious surface. Clinical waste should be kept in a secure storage area inaccessible to unauthorised people and animals.

Trackable Waste

Certain regulated wastes as defined under Schedule 9 of the EP Reg are to be tracked in accordance with the requirements of Section 11 of the EP Reg. Plate 3 – Waste tracking process overview provides an overview of the waste tracking requirements for each stakeholder in the transport and handling of trackable waste chain.

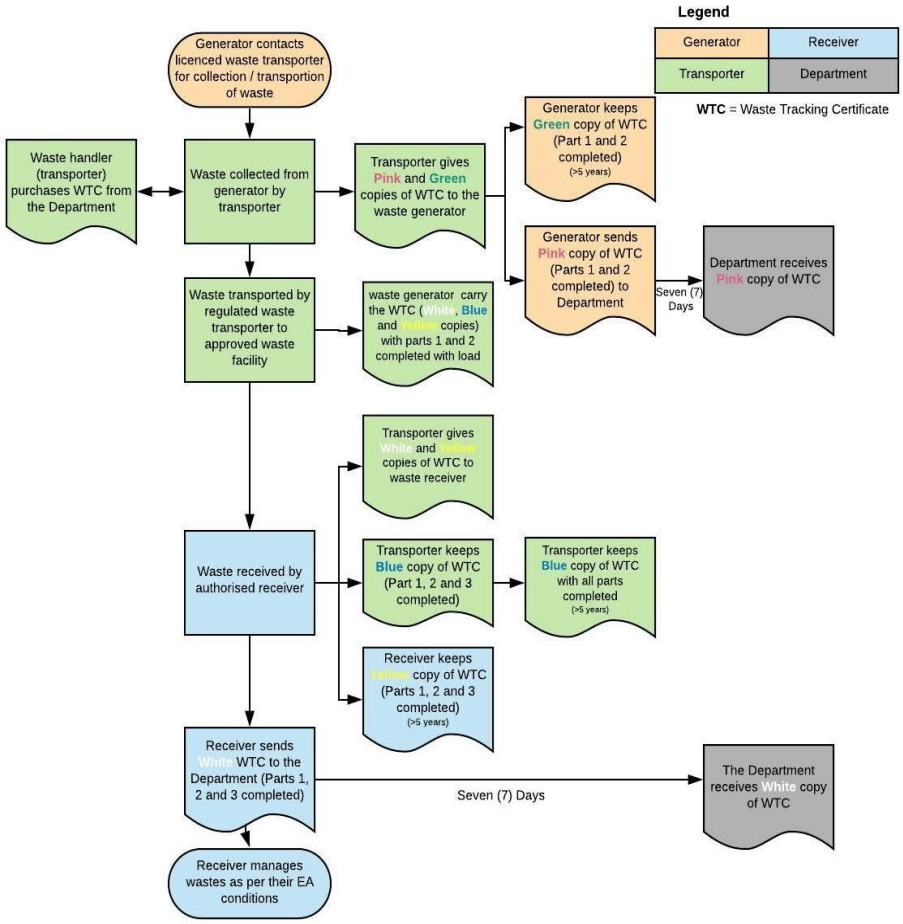


Plate 3 – Waste tracking process overview (based on paper waste tracking certificates)

Monitoring

<u>Responsibilities</u>
The Quarry Manager must ensure that:

- waste treatment measures are implemented at the site.
- waste receptacles are provided, and the waste type identified and that temporary waste storage areas are signed; recycling bins are emptied when full and materials which may cause land contamination are not disposed of on the site.
- records of regulated waste generated at the site are kept, including treatment and disposal methods, approved contractors for transporting and disposing of waste and the location of the facility for accepting the waste.

All site personnel will be responsible for ensuring wastes are stored and removed from the site on a regular basis (e.g. daily or weekly).

<u>Waste Management Practices Assessment</u>
The Quarry Management must undertake a waste assessment on an annual basis to assess the effectiveness of the waste management systems employed at the site to ensure that best practice waste management is carried out. The waste assessment should include:

- Identification of the waste types generated at the site and the current management practices.
- Review of waste reduction measures and their effectiveness.

	To assist in the waste assessment, it is recommended that a waste records examination and facility walk-through are completed. The waste records review may include review of: • Waste inventory, purchase orders, maintenance logs. • Invoices relevant to consumables (e.g. equipment and raw material supplies). • Waste disposal and waste recycling records and contracts (e.g. tyre recycling records, regulated waste disposal dockets) Success indicators against which waste management performance may be assessed include: • Reduction in consumable and raw materials supplies through reuse and recycling implementation such as: o Scrap metals and parts reuse. o Recycling and incorporating sediment collected in stormwater management devices into saleable product. • Using reusable storage containers where possible. • Bulk product purchasing. • Correct use, and possible expansion of, waste recycling receptacles.
Contingency Plan	Where a non-compliance is identified, a review of the Waste Management Plan is to be undertaken to determine areas for improvement. Where necessary, additional staff training on waste management procedures and waste handling must be undertaken. <u>Accidents, spills, and other incidents</u> Where AMCOR becomes aware that regulated waste has been inappropriately disposed of, the incident must be notified to the administering authority in accordance with Section 2.5 – Incident Response Procedure. If a release of contaminants occurs as a result of on-site operations and it is likely to cause serious or material environmental harm, the administering authority must be notified, and an investigation conducted to identify appropriate action to resolve the issue to the fullest practicable extent.

4.7 Weed Management Plan

Objective	The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.
Purpose	This Weed Management Plan has been prepared to provide recommendations for managing weeds at the site. This plan details the roles, responsibilities, and legislative requirements with regards to weed management and control, provides information about suitable weed control measures and provides methods for ongoing inspection and monitoring of weeds at the site.
Performance Targets	• Manage the spread of weeds and protect remnant vegetation and grassland from infestation • Reduction of weeds and promotion of native vegetation in treatment areas.
Strategies / mitigation measures	Site operations must abide by the General Biosecurity Obligation as detailed in Section 23 of the *Biosecurity Act 2014* (Biosecurity Act), which requires the following: *(a) to prevent or minimise adverse effects on a biosecurity consideration of the person's dealing with the biosecurity matter or carrier or carrying out the activity; and* *(b) to minimise the likelihood of causing a biosecurity event, or to limit the consequences of a biosecurity event caused, by dealing with the biosecurity matter or carrier or carrying out the activity; and* *(c) not to do or omit to do something if the person knows or ought reasonably to know that doing or omitting to do the thing may exacerbate the adverse effects, or potential adverse effects, of the biosecurity matter, carrier or activity on a biosecurity consideration.* • If weeds are identified, weed control will be undertaken in the surrounding area to minimise any contamination of material that is to be transported off-site • Routine inspections for restricted matter such as declared plants / listed weeds, feral cat and pig, rabbit, red fox and other potential pests within the quarry area • Develop a control/eradication plan for pests that may potentially occur on the quarry site • Identification of treatment methods and techniques, chemicals, equipment and sources of assistance for pest and weed management • Weed hygiene declaration forms to accompany plant and machinery being brought to site • Ensure weed free certifications are provided with fill material that is brought to site as per the Weed Hygiene Declaration.
Monitoring	Monthly monitoring of invasive plants must be undertaken by the Quarry Manager (or delegate) to determine the effectiveness of weed control, or additional management strategies require, at the site. Where additional controls are required, the Quarry Manager is to delegate A suitably qualified contractor may be engaged to monitor weed mitigation and implement control measures, including weed presence.
Contingency Plan	If failures are identified in the weed management implementation, the following measures may be used: • Review of treatment procedures. • Increasing spraying and treatment where appropriate • Transport weed waste to a designated refuse site for disposal.

4.8 Rehabilitation Management Plan

Objective	The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.
Purpose	This Rehabilitation Management Plan has been prepared to assist with site rehabilitation.
Performance Outcomes	• Limit land disturbance to that which is necessary at any one time. • Identify any land contamination and implement appropriate remediation or management where necessary. • Land that has been disturbed for activities must be rehabilitated in a manner such that: 1. suitable native species of vegetation for the location are established and sustained for earthen surfaces 2. potential for erosion is minimised 3. the quality of water released from the site, including seepage, does not cause environmental harm 4. potential for environmental nuisance caused by dust is minimised 5. the water quality of any residual water body does not have potential to cause environmental harm 6. the final landform is stable and protects public safety. • Rehabilitation of disturbed areas must take place progressively as works are staged and new extraction areas are commenced.
Strategies	<u>Progressive Rehabilitation</u> Rehabilitation is to be undertaken progressively throughout the life of the operations and is to commence in each area as soon as practicable after completing extraction in each stage. Progressive rehabilitation will be deemed complete when the Key Performance Indicators are achieved (refer to Key Performance Indicators). <u>Final Landform and Final Land Use Description</u> The final landform of the site is to demonstrate consideration for the zoning of the land and surrounding undisturbed areas. The landform is likely to comprise of a gently sloping, free draining platform surrounded by batters. Water bodies may be incorporated in the final landform for ongoing beneficial use by the landowner for water storages (e.g. livestock drinking water supply). <u>Topsoil and Subsoil Management</u> The following measures should be implemented for topsoil and subsoil stripping: • Materials should not be stripped when too wet or too dry. • When stripped, materials should be used directly for rehabilitation to the maximum practicable extent or stockpiled and preserved for future use. • Stockpiling of materials should not exceed a height of 2 to 3 m and should be shaped and revegetated to protect the soil from erosion and weed infestation. Examples of species that are suitable for short term stabilisation include Burgundy bean (*Macroptilium bracteatum*), Butterfly pea (*Clitoria ternatea*), Perennial forage sorghum, 'Silk' sorghum (Sorghum), Sulla (*Hedysarum coronarium*). • Stockpiles should be maintained in a free draining condition and long-term soil saturation should be avoided. • Runoff waters external to the areas to be stripped should be diverted away from the working area. • Stripping of topsoil should be limited to the minimum area necessary. The following measures should be implemented for topsoil and subsoil spreading:

- Whenever possible, stripped materials should be directly placed on an area undergoing rehabilitation.
- Areas to be re-spread should be shaped prior to placing materials over the re-profiled surface.
- Equipment used to spread materials should be scheduled to avoid compaction.
- Before respreading the materials, loosen the underlying substrate to break up any compacted or surface sealing and to enable keying of the two (2) materials.
- On slopes less than 3(H):1(V), loosen lightly compacted substrate, ensuring all ripping operations occur along the contour.
- Materials are to be removed from stockpiles in a manner that avoids vehicles travelling over the stockpiles.
- Materials are to be respread in the reverse sequence to its removal so that the original upper soil layer is returned to the surface to re-establish the entrapped seed content of the soil.
- Ensure all exposed substrates are covered with a minimum 150mm of suitable topsoil / subsoil to enable success of revegetation.
- After spreading materials, ensure the surface is left in a roughened state to assist moisture infiltration and inhibit soil erosion.
- Prior to any revegetation, cultivate any compacted or crusted topsoil surfaces (to a depth no greater than the depth of the materials to be spread).
- Spreading is to be immediately followed by revegetating wherever possible.
- If erosion occurs on treated surfaces, the area is to be re-spread with additional materials and revegetated.

Revegetation

Species availability will determine the revegetation requirements. The site is to be returned to a vegetated condition.

Terminal Batters

When an area of the quarry bench is excavated to its final extraction level and it is not required for ongoing operations, the quarry bench is to be covered with overburden and topsoil. Terminal benches shall be battered to varying slopes depending on the geotechnical properties of the substrate.

Weed and Pest Control

- Any materials (e.g. soil, mulch, straw) brought onto site for rehabilitation are to be inspected to ensure they are free from weeds and pests.
- Prior to the establishment of vegetation, a spraying campaign may be required to control weeds to prevent migration of weed species into areas under rehabilitation.
- Alternative methods for controlling both grass and weeds include manual weeding, burning, slashing, weed matting and mulching (refer to Section 4.7 – Weed Management Plan for guidance on weed management).
- Predation (e.g. grazing animals, birds, and insects) are risks for revegetation. Depending on the situation, specific measures may be required to protect the works from predation such as fencing.

Water Bodies

Water bodies are likely to remain within the final landform, created through the final extraction void and sediment basins utilised for stormwater management during the operational phase of the quarry.

Water bodies are to be converted to clean water storages where they are to be retained in the final landform. This can be achieved by:

- Cleaning sediment from the base of water storages.
- Battering slopes to achieve grades of no more than 3(H):1(V) where practicable.
- Ensuring that the water quality within these water storages is suitable for future use.

AMCOR is to engage a suitably qualified person to assess water quality of any residual water bodies at the site to ensure that the release parameters specified by the EA conditions, or other water quality objectives agreed with the administering authority.

	Land Contamination Prior to site closure, a contaminated land assessment by a suitably qualified person may be required. Assessment of site contamination, if required, is to be undertaken and managed in accordance with the following: • *National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013)* • *AS 4482.1-2005 - Guide to the sampling and investigation of potentially contaminated soil. Part 1 – Non-volatile and Semi-volatile compounds* (Standards Australia 2005a). • *AS 4482.2-2005 - Guide to the sampling and investigation of potentially contaminated soil. Part 2 – Volatile Compounds* (Standards Australia 2005b). Should it be identified that areas of the site have been contaminated through the operational activities, these areas are to be remediated, and validated as contaminant free, prior to site closure. Infrastructure Infrastructure that is to remain on-site after the surrender of the approvals may only be retained where a landowner agreement has been provided to the administering authority which clearly itemises the infrastructure that will remain, and detail the condition it is to remain in. It is anticipated that the following infrastructure would be suitable for retention: • Utilises and services (e.g. water, electricity, telecommunications, gas). • Access tracks and roads. • Water storages (rehabilitated). Plant, equipment and buildings (including demountable and mobile infrastructure) should be removed from the final landform. A landowner's agreement should be prepared at cessation of the rehabilitation to confirm satisfaction with the rehabilitation site and for retention of any infrastructure within the landform.
Key Performance Indicators	The Key Performance Indicators (KPIs) summarised in Table 11 – Key Performance Indicators for Rehabilitation have been established to provide quantifiable measures for achieving the d performance targets for rehabilitation. Each of the KPIs are assigned to AMCOR for completion; however, should AMCOR require assistance to measure the achievement of these KPIs, they are to engage a suitably qualified person.
Monitoring	AMCOR must undertake a monitoring and maintenance period following the rehabilitation phase and action any remedial measures to ensure the rehabilitated landform transition to a self-sustaining state. The Quarry Manager or delegate must conduct regular inspections of any rehabilitated areas to ensure maintenance and repairs are carried out as necessary. Maintenance works may include fertilising, watering, repairs to barriers, guards and plant failure replacements, refer to Table 14 – Maintenance Schedule for Revegetation Works. The monitoring and management program will review the ongoing success of the rehabilitation treatment. The Quarry Manager or delegate may engage a consultant to assist with any detailed monitoring or management of rehabilitation. The key parameters to be measured as part of the rehabilitation monitoring and management program will include: • Landform stability • Erosion and sedimentation • Groundcover success (<70% desirable) • Vegetation species composition and density • Water quality • Weed presence.

Contingency Plan	Final rehabilitated areas are to be visually monitored by the Quarry Manager or delegate and, where relevant, assessed by suitably qualified persons to determine the effectiveness of measures implemented. If monitoring identifies failures in the rehabilitation implementation, the following contingency measures may be used, however; these will be adapted to the failure identified: • Replacement of failed plantings to increase establishment / success rates. • Use of fertilisers and soil ameliorants where necessary. • Reprofiling or eroded or failed landforms. • Application of additional topsoil where necessary to support vegetation growth. • Impletion of additional erosion and sediment controls. • Water quality improvements where necessary.

Table 11 – Key Performance Indicators for Rehabilitation

KPI Description	Measure(s)	Critical Timeframe
Total land disturbance at any one time is limited to that necessary to advance the next stage of quarry development.	Area measurement and demarcation of limits.	Continuous review in accordance with development of the site.
Sufficient topsoil for rehabilitation has been retained.	Volume (m^3) of topsoil and subsoil retained for rehabilitation.	At implementation and completion of each development stage.
The final landform demonstrates consideration for the surrounding undisturbed areas and land zoning.	True / False.	Prior to lodgement of application for surrender.
Suitable species are to be utilised for revegetation in accordance with 'Species Selection'.	Species as per 'Species Selection'.	Prior to commencement of rehabilitation activities.
Groundcover achieves a suitable density to protect surface soils from rain-induced erosion (EHP 2014b).	Groundcover at a minimum of 70% (EHP 2014b).	• Assessment prior to any stormwater management device reduction or removal; and, • Final assessment prior to surrender application.
Erosion rates of soil / sediment from disturbed areas associated with the extractive industry activities does not exceed natural rates experience for the locality.	Local erosion rate calculated and compared against actual site erosion rates.	Within three months of completion of each stage of the quarry (including at final stage).
Evidence that water quality of any residual water bodies complies with the water quality objectives of the EA or other agreed release parameters. Alternatively, water bodies are to be filled and stabilised with vegetation to create a clean, free-draining catchment.	Water quality objectives of EA conditions or other agreed Water Quality Objectives (e.g. Livestock Watering Guidelines).	Prior to lodgement of a surrender application for the EA.
Air quality of the final landform achieves levels consistent with adjacent undisturbed areas through establishment of the final landform.	Visual surveillance and complaints register review. If monitoring is required, refer to Section 4.1 – Air Quality Management Plan contained in the SBMP.	Prior to lodgement of a surrender application for the EA.
Review of geotechnical stability confirms that the site is stable and not subject to slumping.	Geotechnical assessment.	Prior to lodgement of a surrender application for the EA.
Assessment confirms the slope stability of final landforms.	Slope ratio, degree or percentage.	Prior to lodgement of application for surrender.

KPI Description	Measure(s)	Critical Timeframe
Landowner statement(s) obtained for: a) any retained items of extractive industry-related infrastructure; and b) satisfaction with the rehabilitated final landform.	True / False.	Prior to lodgement of application for surrender.

Table 12 – Maintenance Schedule for Revegetation Works

Item	Activity	Frequency
<u>Weed Control</u>		
Site Preparation (where necessary)	Application of herbicide and / or slashing	One (1) treatment at least two (2) weeks prior to seeding / planting
Ongoing Weed Management	Application of herbicide	Suggested biannually or as required
Supplementary Weeding	Application of herbicide	As required
<u>Re-vegetation Management</u>	Monitor performance and conduct any necessary maintenance Replace diseased or dead plants Fertilise (if applicable) Apply mulch (if available)	• One (1) month after seeding / seedling planting • Three (3) months after seeding / seeding planting • Six (6) months after seeding / seedling planting • 12 months after seeding / seedling planting OR • following significant rainfall events (e.g. >25 mm) As necessary following maintenance inspections Two (2) months after topsoil spreading or seeding One-off around tube stock plantings
<u>Pasture Management</u>		
Grass Height	Slashing	Biannually until established
Grass Vigour	Fertilise	Annually (if necessary)

References

DAF (Department of Agriculture and Fisheries, (2020). *Invasive plants (weeds).* Accessed October 20, 2020 via https://www.daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/plants-weeds

DES. (Department of Environment and Sciences), (2018). *Monitoring and Sampling Manual: Environmental Protection (Water) Policy*. Accessed October 20, 2020 via https://environment.des.qld.gov.au/__data/assets/pdf_file/0031/89914/monitoring-sampling-manual-2018.pdf

DES. (Department of Environment and Sciences). (2020). *Guideline: Noise and vibration from blasting.* Accessed October 20, 2020 via https://environment.des.qld.gov.au/__data/assets/pdf_file/0028/89380/ts-gl-blasting-noise-and-vibration.pdf

EHP (Department of Environment and Science), (2020). *Noise Measurement Manual.* Accessed October 20, 2020 via https://environment.des.qld.gov.au/licences-permits/pdf/noise-measurement-manual-em1107.pdf

EPA (Environmental Protection Agency), (1997). *Air Quality Sampling Manual.* Department of Environment: Brisbane, Qld.

EHP (Department of Environment and Heritage Protection), (2014a). *Stormwater and environmentally relevant activities.* Accessed October 20, 2020 via https://environment.des.qld.gov.au/__data/assets/pdf_file/0028/89119/pr-gl-stormwater-guideline-era.pdf

EHP (Department of Environment and Heritage Protection), (2014b). *Guideline: Rehabilitation requirements for mining resource activities.* Queensland Government: Brisbane, QLD

IECA (International Erosion Control Association), (n.d.). *Example site-based Stormwater Quality Management Plan*. Accessed October 20, 2020 via https://www.austieca.com.au/documents/item/362

Queensland Globe, (2020). Accessed October, 2020 via https://qldglobe.information.qld.gov.au/

Standards Australia, (2005a). *AS 4482.1 - Guide to the sampling and investigation of potentially contaminated soil. Part 1 – Non-volatile and Semi-volatile compounds* Standards Australia: Sydney, NSW.

Standards Australia, (2005b). *AS 4482.2 - Guide to the sampling and investigation of potentially contaminated soil. Part 2 – Volatile Compounds* Standards Australia: Sydney, NSW.

Standards Australia, (2006). *AS 2187.2 Explosives - Storage and use - Use of explosives*. Standards Australia: Sydney, NSW.

Standards Australia, (2013). *AS 3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter— Deposited matter – Gravimetric method.* Standards Australia: Sydney, NSW.

Standards Australia, (2015). *AS 3580.9.6 Methods for sampling and analysis of ambient air— Determination of suspended particulate matter—PM_{10} high volume sampler with size selective inlet – Gravimetric method*. Standards Australia: Sydney, NSW.

Standards Australia, (2017). AS *1940 - The storage and handling of flammable and combustible liquids.* Standards Australia: Sydney, NSW.

Standards Australia, (2018). *AS ISO 31000:2018 Risk management – Guidelines.* Standards Australia: Sydney, NSW.

attachments

Attachment 1

Annual Environmental Performance Review

Annual Environmental Performance Review

Site:
Date:
Reviewer:

Approvals

1. Have there been any changes to the site approvals?

   Note: consider the Environmental Authority, Development Permit, etc.

   Yes ☐ No ☐

   If yes, provide details of the change (e.g. change to Environmental Authority condition, or Development Permit condition). Include the date / reference number of the current approvals relevant to the site activities.

   _____
   _____
   _____
   _____
   _____
   _____

Environmental Monitoring

2. Has all monitoring required under the Environmental Authority been carried out?

   Yes ☐ No ☐

   If no, provide details

   _____
   _____
   _____
   _____
   _____
   _____

3. Has all monitoring required under the Site Based Management Plan (SBMP) been carried out?

   Note: Refer to Section 4. Environmental Management Plans for monitoring requirements.

   Yes ☐ No ☐

   If no, provide details

   _____
   _____
   _____
   _____
   _____
   _____

4. Were any exceedances of the approval limits recorded?

Yes ☐ No ☐

If yes, provide details.

_____
_____
_____
_____
_____
_____

5. Was the exceedance reported to the administering authority?

Yes ☐ No ☐

Provide details of any notifications to the administering authority and actions taken to address the exceedance (if any).

_____
_____
_____
_____
_____
_____

Complaints / Incidents

6. Have any complaints been received, or environmental incidents reported, over the previous 12 months?

Note: An environmental incident generally relates to an event which has caused, or threatens, serious or material environmental harm, consistent with the duty to notify of environmental harm under Division 2 of the *Environmental Protection Act 1994*.

Yes ☐ No ☐

If yes, briefly summarise the nature of the complaint and/or incident and any action taken to resolve the matter.

_____
_____
_____
_____
_____
_____

Site Operations

7. Have there been any changes to the site operations over the previous 12 months?

Yes ☐ No ☐

If yes, provide details and determine if any change to the SBMP or associated management documents are required.

_____
_____
_____
_____
_____
_____

Proposed Measures for Improved Environmental Performance

8. Are any measures proposed to be implemented over the coming 12 months to improve the environmental performance of the site?

Note: Examples of measures may include revised stormwater management measures, changes to fuel / chemical storage, etc.

Yes ☐ No ☐

If yes, provide details and determine if any change to the SBMP or associated management documents are required.

_____
_____
_____
_____
_____
_____

Attachment 2

Spill Response Protocol

mcmurtrie
CONSULTING ENGINEERS

Traffic Impact Assessment Report

Stanwell Quarry
on Power Station Road and the Capricorn Highway

Prepared For: Amcor Quarries and Concrete

Job No. 087-20-21
July 2021
Revision A

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Traffic Impact Assessment Report

Rev.	Description	Signature	Date
A	Client Issue	RPEQ 5141	26-7-21

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Traffic Impact Assessment Report

Stanwell Quarry Haulage Operation, on Power Station Road and the Capricorn Highway

EXECUTIVE SUMMARY

McMurtrie Consulting Engineers (MCE) have been commissioned by Amcor Quarries and Concrete (AMCOR) to undertake a Traffic Impact Assessment (TIA) as part of a development application for an extension to the Stanwell Quarry (quarry), located at 294 Hume Road, Kabra.

The development application proposes to extend the existing extraction area of the quarry which operates pursuant to an existing development approval issued by the former Fitzroy Shire Council on 10 September 2002. The existing approval limits the annual production of the quarry to a maximum of 1,000,000 tonnes per annum (tpa). Historically, the quarry has produced approximately 250,000tpa. AMCOR are seeking to increase the annual production to 444,000tpa (increase of 194,000tpa).

The quarry will continue to utilise the existing haulage route (Power Station Road to the Capricorn Highway) and haulage vehicles (truck and dog combination).

This report has been prepared to address the following items:

- Safety of road network;
- Suitability of existing site access;
- Pavement conditions and potential loading;
- Assessment of existing intersections along haulage route;
- Recommended mitigation measures.

An analysis has been undertaken by MCE to determine the level of potential impacts of the proposal on the operation and safety of the surrounding road network, and the potential impacts on the existing pavement on Power Station Road. Whilst the proposal will also utilise the Capricorn Highway, a State Controlled Road (SCR), the resultant traffic generation of the proposed operation does not exceed the 5% threshold specified in DTMR's GTIA.

Based on the low background traffic volumes along Power Station Road, it is anticipated that the quarry will have a minimal impact on the mid-block section of Power Station Road, with adequate capacity expected to be available to cater for the additional heavy vehicles. Given that the proposal will only impact on the through movements at each intersection along Power Station Road, the impact of the proposed haulage on the operation (including vehicle delay) of the relevant intersections on the local road network can be deemed to be negligible.

It has been determined that the Power Station Road / Stanwell Quarry access can cater for the wheel paths of the haulage vehicle movements, with no widening required along Power Station Road or at each intersection along its haulage route, including the Capricorn Highway / Power Station Road intersection to accommodate the proposal.

An assessment of the expected pavement impacts to the relevant sections of Power Station Road was undertaken for the proposed increase to the haulage limit (from 250,000tpa to 444,000tpa), between the quarry access and the Capricorn Highway. This assessment identified that the additional heavy vehicle movements associated with the proposal are expected to lead to increases in pavement loadings on the identified sections of Power Station Road above the recommended 5% impact trigger. As such pavement impact contribution calculations were undertaken using the standard DTMR Fitzroy District spreadsheet methodology. Using the standard DTMR methodology resulted in a pavement contribution of 66.88 cents/tonne which is a substantially prohibitive pavement contribution that renders the quarry unfeasible. As such, an alternative contribution which is commensurate to the size, scale and location of the quarry of 20 cents/tonne is recommended. This is considered to be satisfactory based on the relatively short distance between the quarry access and the SCR.

Based on the above, with a suitable road contributions to offset the expected increased maintenance and rehabilitation requirements of Power Station Road, the additional traffic generated by the proposal will have a minor impact on the surrounding road network.

INTRODUCTION

1.1. BACKGROUND

AMCOR are proposing to extend the existing extraction area of the Stanwell Quarry, located at 294 Hume Road, Kabra. Historically the quarry has produced approximately 250,000tpa. AMCOR are seeking to increase the annual production to 444,000tpa (increase of 194,000tpa).

1.2. SCOPE AND STUDY AREA

MCE have been commissioned by AMCOR to undertake a Traffic Impact Assessment (TIA) for the proposed annual haulage of up to 444,000 TPa along Power Station Road, Kabra

This TIA was carried out to determine the level of potential impacts of the development proposal on the existing road pavement of Power Station Road. The outcomes of the assessment will be used to inform discussion regarding the project with Rockhampton City Council (RCC) and the Department of Transport and Main Roads (DTMR), with the assessment methodology adopted for the TIA summarised via the key tasks listed below:

- Broadly identify the existing transport infrastructure which is of relevance to the development proposal;
- Estimate traffic generation associated with the proposed road haulage operation and the distribution of this haulage traffic on the identified road network;
- Assess the potential impact of the proposed road haulage operations on the surrounding transport infrastructure, in particular the pavements of the surrounding road network; and
- Identify potential mitigation and management strategies to be implemented during the proposed road haulage operations to offset the potential impact of the development proposal (if required).

As outlined above, the adopted methodology centers on establishing a background, “without development” traffic scenario for the identified transport route and comparing this with a scenario including the Project-generated traffic (i.e. the “with development” scenario).

The process allows for the assessment of the traffic impacts of the Project in terms of road safety, road link capacity, pavement and other transport infrastructure. Following this, if required, potential mitigation and/or management measures would be formulated to address the potential traffic impacts caused by the development proposal.

STUDY AREA

As previously identified, material will continue to be hauled between the Capricorn Highway and Stanwell Quarry in Kabra, as shown in Figure 1.1. It is noted that the full length of the route, approximately 4km, will be on the Council controlled network, with the balance, from the Power Station Road / Quarry Access intersection maintained by the Stanwell Quarry.

It is noted that the Capricorn Highway is a State controlled road (SCR) under the jurisdiction of the DTMR. As discussed in Sections 2.3 and 5.4, the proposal does not trigger the 5% threshold of background traffic loading along the SCR, therefore a detailed assessment of impacts is not considered to be warranted.

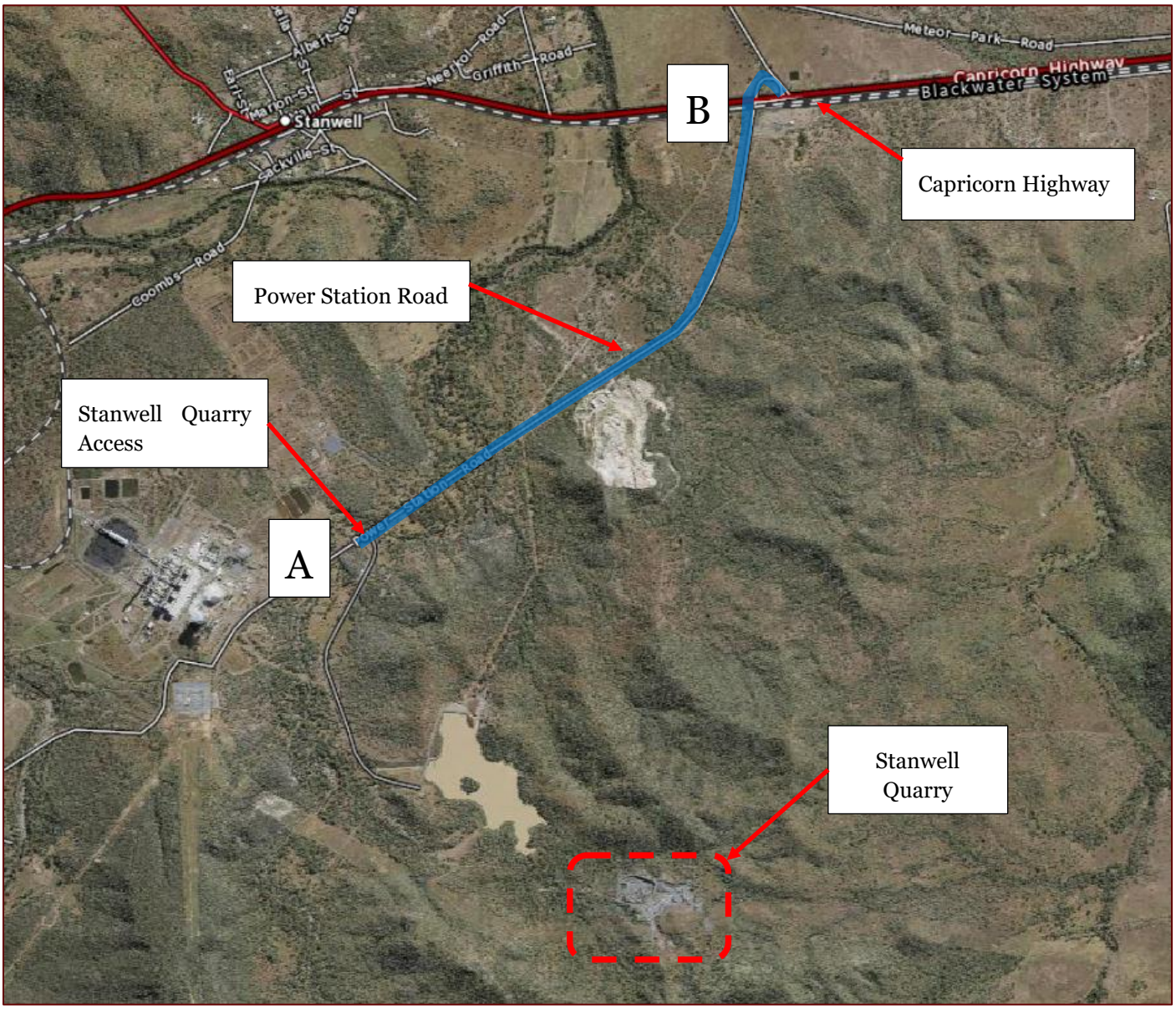


Figure 1.1 Study Area –Power Station Road [Source: Qld Globe]

1.3. DATA SOURCES

This assessment utilises both background traffic data and existing road pavement roughness data for Power Station Road provided by RCC.

A copy of the raw traffic count and pavement roughness count data for the relevant road segments is provided for reference as **Appendix A** and **Appendix B** respectively, with a summary of the data received for the relevant sections of the road network provided below:

RCC AADT Traffic Count Reports

- Power Station Road (2016).

RCC Pavement Roughness Data

- Power Station Road (2019) – Ch 00.000 (Capricorn Highway / Power Station Road intersection) to 4.033 (Stanwell Quarry Access).

DTMR AADT Traffic Count Reports

- Capricorn Highway (2020).

EXISTING CONDITIONS

2.1. LAND USE AND ZONING

The lots adjacent to the haulage route are generally identified as high and special industry zones under the RCC's Planning Scheme, as shown in **Figure 2.1** below.

A copy of a wider network surrounding the subject site has also been included for reference as **Appendix C**.

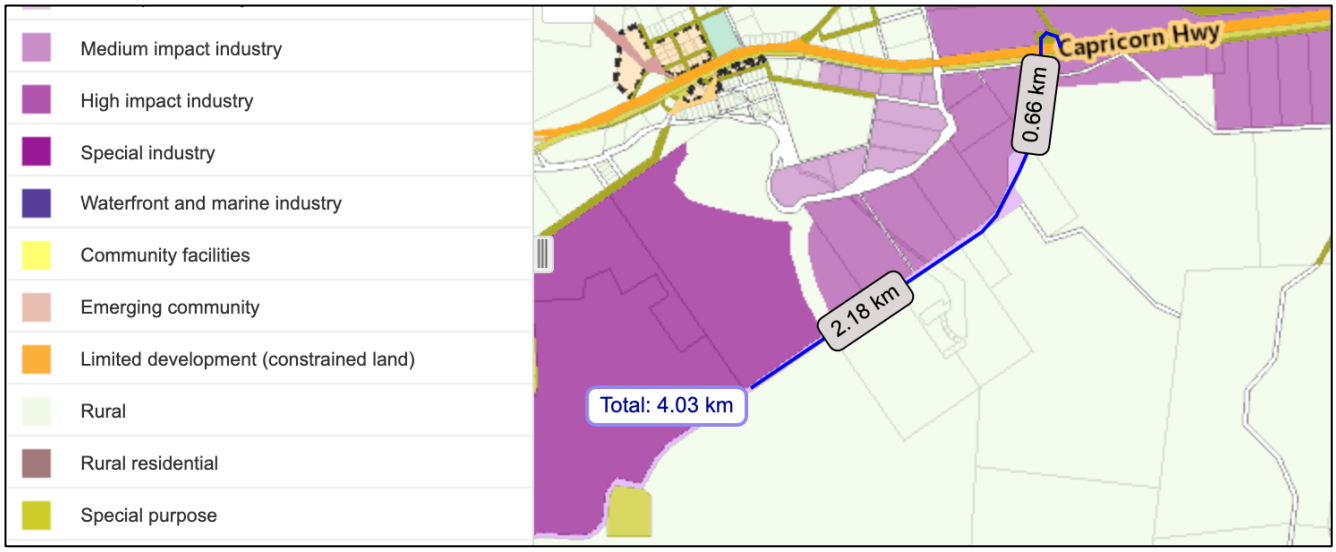


Figure 2.1 Land Use Zoning –Power Station Road, between site access and the Capricorn Highway [Source: RCC Zoning Maps]

2.2. SURROUNDING ROAD NETWORK DETAILS

PROPOSED TRANSPORT ROUTE

Based on operational data provided by the proponent (AMCOR) it is understood that the quarry is anticipated to transport up to 444,000 tonnes of material per annum starting in 2022. The development proposal assumes 300 days of cartage annually, with truck and dog combination as the haulage vehicle.

Based on existing haulage operations, utilising a truck and dog trailer combination vehicle, it is considered that the Power Station Road / Stanwell Quarry access can cater for the wheel paths associated with the proposal, with no widening required along Power Station Road or at each intersection, including the Stanwell Quarry access to accommodate the operations.

The Power Station Road / Stanwell Quarry Access intersection to the Stanwell Quarry (*Point A, Figure 1.1*) is a privately owned access roads and for this reason will not be assessed under this TIA. Therefore, the proposed transport route to be assessed is:

Power Station Road, between the Capricorn Highway to Stanwell Quarry Route

- Power Station Road – Ch 00.000 (Capricorn Highway / Power Station Road) to Ch 4.033 (Stanwell Quarry access)

Further information regarding the sections of the road network identified to be relevant to this TIA are provided in the following sections.

ROAD LINKS

Power Station Road

Power Station Road is a local government-controlled road under the jurisdiction of the RCC. Overall, the link provides a connection from the Capricorn Highway in the north to the Stanwell Rail site and a number of rural properties, along its length up to the Stanwell Quarry access road. The section of Power Station Road relevant to the proposed haulage operations is the 4km section between the intersection with the Capricorn Highway (Ch. 00.000 km) in the north to the entry to Stanwell Quarry to the south (Ch 4.033km).

The road provides a two-way, two lane sealed configuration with the existing carriageway generally providing a 7.0m wide road width along the link, as shown in **Figure 2.2** and **Figure 2.3** below.



Figure 2.2 Power Station Road Existing Conditions – Site Access Facing West



Figure 2.3 Power Station Road Existing Conditions – Site Access Facing East

INTERSECTIONS

In addition to the road link described above there are two intersections identified to be relevant to the development proposal as they will cater for the main turning movements of the vehicles associated with the proposed haulage operation onto Power Station Road.

1. Power Station Road / Stanwell Quarry Access *(Figure 1 – Point A)*; and
2. Capricorn Highway / Power Station Road intersection *(Figure 1 – Point B)*.

Power Station Road / Stanwell Quarry Access

The access location currently provides ingress and egress to larger movements into the Stanwell Quarry site. It is noted that access to the site for the approved scale of operation is facilitated at the existing intersection. The intersection appears to have minor deficiencies and wear as a result of historic use. The existing access currently facilitates heavy vehicle movement associated with haulage of approximately 250,000 tonnes annually. No known incidents have been recorded in the vicinity of the site as a result of heavy vehicles entering and exiting the site.

The location and proposed haulage movements at the Stanwell Quarry Access are shown in **Figure 2.4** below.

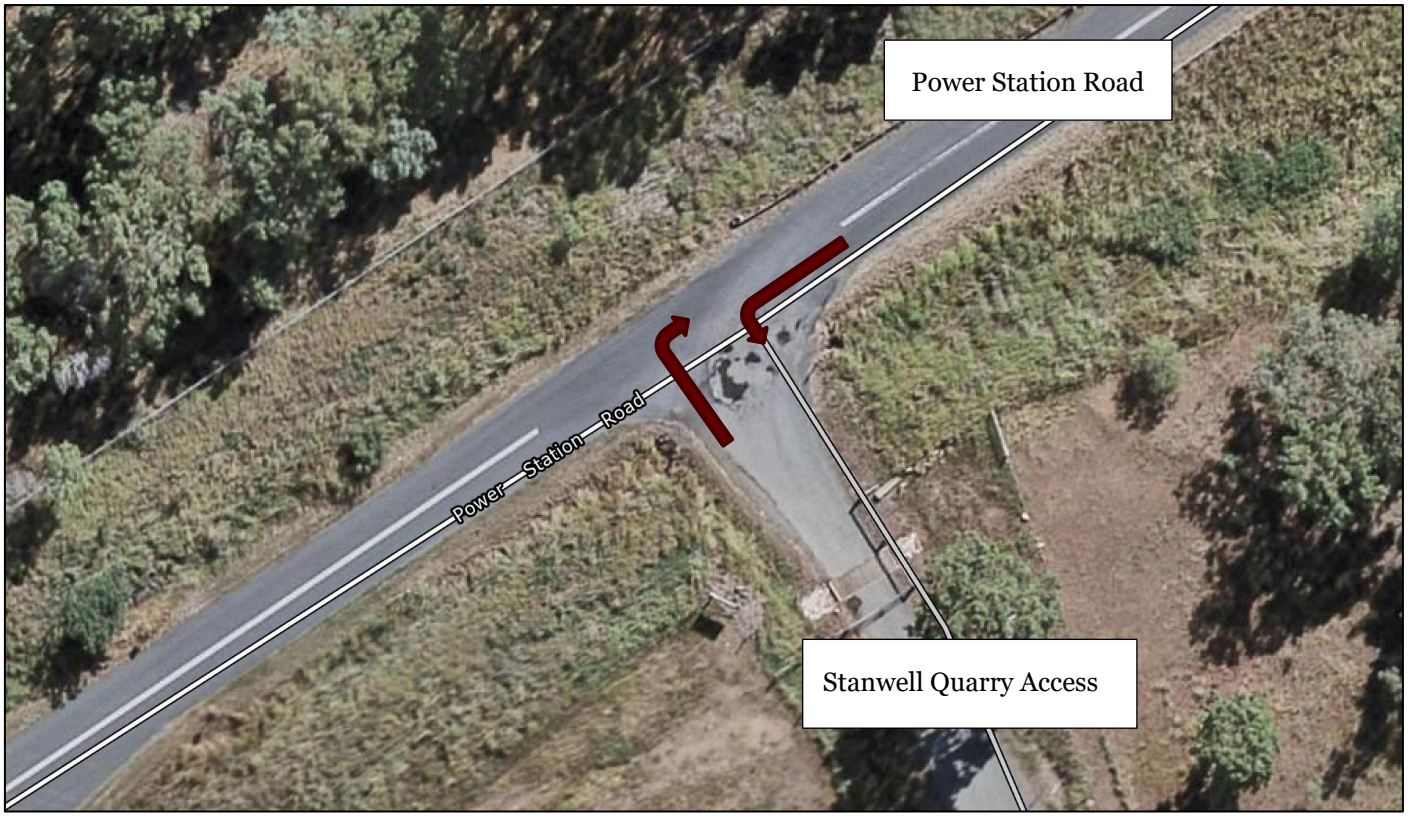


Figure 2.4 Power Station Road / Stanwell Quarry Access - Configuration

[Source: Queensland Globe]

Capricorn Highway / Power Station Road intersection

Access to Power Station Road from the westbound traffic flow on the Capricorn Highway is gained via an off ramp. A three way priority controlled (give way sign) intersection is provided for the eastbound traffic flow, with a short deceleration and acceleration lanes provided to facilitate eastbound entry and exit movements respectively.

The relevant turn movements at this intersection will be inbound left turn from the Capricorn Highway onto Power Station Road and outbound left turn from Power Station Road onto the Capricorn Highway on the return journey.

The current form of intersection is shown in **Figure 2.5** below.

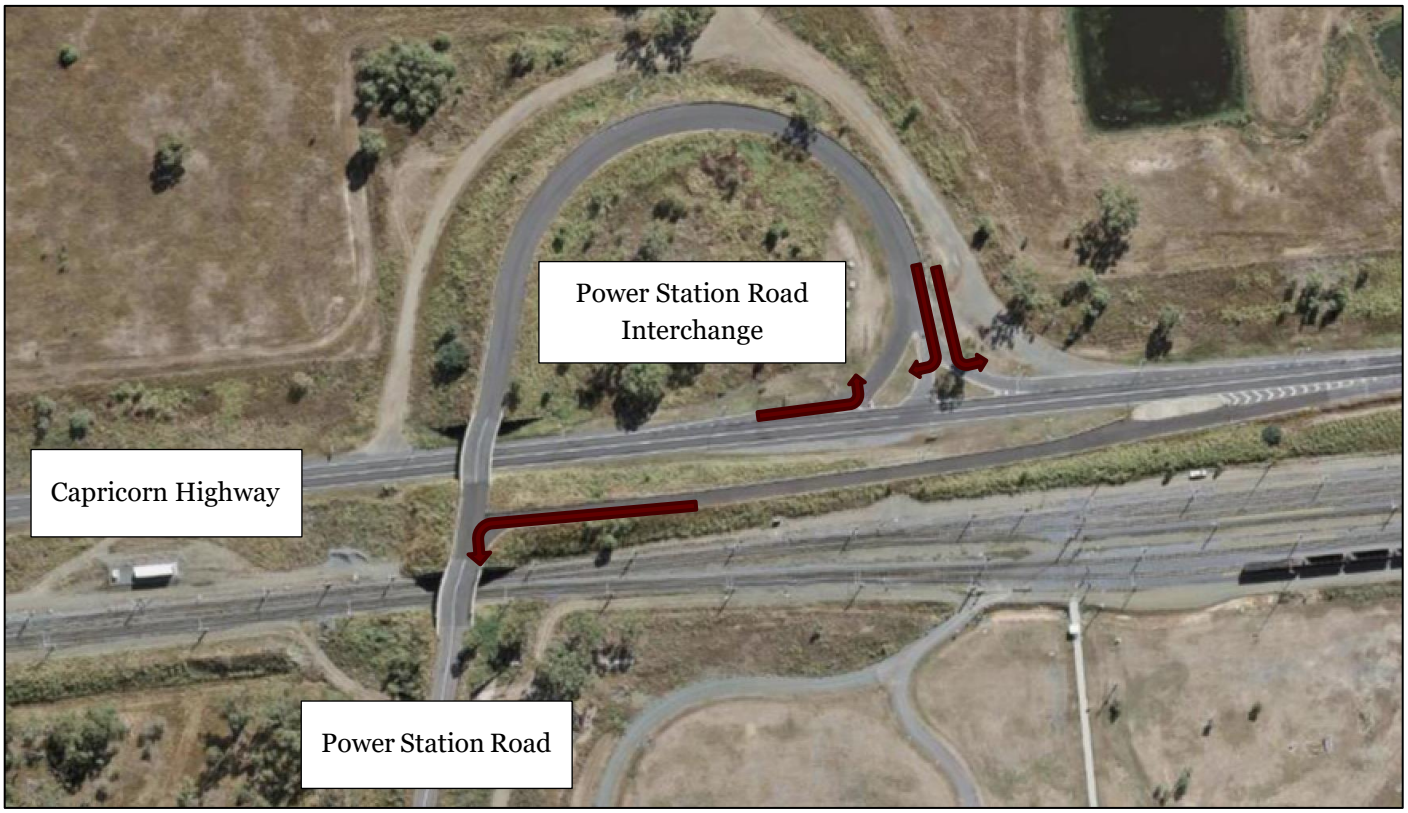


Figure 2.5 Capricorn Highway / Power Station Road Intersection – Existing Configuration [Source: Queensland Globe]

2.3. TRAFFIC VOLUMES

ROAD LINK VOLUMES

The background traffic volumes for the relevant sections of the road network were established using the available AADT segment traffic count data provided by RCC and DTMR (refer **Appendix A**).

To establish an appropriate estimate of traffic volumes for road links on Power Station Road, the following assumptions were adopted:

1) For Power Station Road, the latest AADT count from February 2016 (157 vpd including 20.5% heavy vehicles) has been adopted as the base daily link volume (2016 volume); and
2) For the purpose of the assessment, it is assumed that the daily link traffic volumes can be evenly split (50%/50%) to establish the daily directional traffic volumes.

A background traffic growth rate of 1% (compound p.a.) has also been applied to the calculated base daily link volumes on Power Station Road to estimate the design (2022) daily traffic volumes on the network.

For the purposes of the analysis traffic data has also been obtained from the DTMR in the vicinity of the Capricorn Highway / Power Station Road intersection.

The road link traffic volumes for each of the road segments relevant to the proposed road haulage operation are shown in Tables 2.1 and 2.2.

Table 2.1 Forecast Future Background AADT Traffic Volumes (Council Controlled Road)

Road ID	AADT Segment		Base Data Year	Base Year (2016) AADT				10 Yr. GR %	Background AADT (2022)			
	Start (km)	End (km)		Gaz	% HV	A-Gaz	% HV		Gaz		A-Gaz	
									Total	HV	Total	HV
Power Station Road												
-	00.000	3.45	2016	157	20.1	157	20.1	1.00	166	32	166	32

Table 2.2 Background AADT Traffic Volumes (State Controlled Road)

Road ID	AADT Segment		Base Data Year	Base Year (2020) AADT				10 Yr. GR %	Background AADT (2022)			
	Start (km)	End (km)		Gaz	% HV	A-Gaz	% HV		Gaz		A-Gaz	
									Total	HV	Total	HV
Capricorn Highway												
61457	13.37	17.86	2020	2,014	23.88	1,980	20.15	1.00	2,055	491	2,020	407
60040	17.86	51.62	2020	1,719	18.73	1,712	23.01	1.00	1,754	328	1,747	402

It is noted that the surveyed traffic volumes along the above road links include traffic generated by the quarry under its current approval. The proposal (additional 194,000 tonnes) will result in approximately 21 additional trucks per day (return trips) to facilitate the increased haulage capacity of the site. Based on this the proposal is not expected to trigger TMR's 5% impact threshold along the SCR (refer to Section 5.4). Therefore, a further assessment of impacts along the Capricorn Highway is not considered to be warranted.

INTERSECTION VOLUMES

No specific intersection count volumes are available for the Capricorn Highway / Power Station Road intersection. However, based on the low daily traffic volumes on the major approach roads of the intersection (TMR Census Data (2020) – Appendix A), it is expected that peak hourly traffic volumes at the intersection will also be relatively low, with volumes in the order of 200 vpd on the Capricorn Highway (bidirectional) and 17 vph in either direction on Power Station Road.

INTERSECTIONS

As previously noted, no turning movement count data was available at the Capricorn Highway / Power Station Road intersection and the Power Station Road / Quarry Access intersection. However, given on the low daily traffic volumes forecast on the approach roads, the peak hour turning volumes at the critical intersections were expected to also be relatively low.

Based on the above and the existing configuration of the Capricorn Highway / Power Station Road intersection, providing an off ramp from traffic exiting from the westbound traffic flow, and dedicated treatments at the approach and departure of the intersection for the eastbound traffic flow, it is anticipated that the current configuration of each intersection will operate well within acceptable limits under the design (2022) traffic conditions.

The Power Station Road / Quarry Access intersection currently allows for the design vehicle under its existing approval. It is therefore considered that no major upgrade is required to accommodate the proposal.

Our inspection of existing conditions identified that some mitigation works and repairs to the throat of the access is required. Based on the wear patterns identified during our investigation it is evident that the majority of truck movements are right out and left in. It is also noted that vehicles use the far side gravel shoulder to traverse the intersection.

Furthermore, it is noted that the existing form of intersection does not allow a typical BAR turn treatment due to the guardrail on the far side of the site access. Given this, it is not expected that such can be provided reasonably. However, it is considered to be acceptable given the limited right turn movements at the intersection and 'brownfield' nature of the site.

It is recommended that maintenance to the sealed widening of the intersection throat and the far side of the road be provided where the presence of existing edge wear is pronounced. Images taken from our site investigation are provided in **Figure 2.6 – 2.9,** with a swept path analysis at the critical intersection along the haulage route provided as **Attachment H**.



Figure 2.6 Site Access, Facing North



Figure 2.7 Site Access, Facing South



Figure 2.8 Proposed Location of Widening Seal



Figure 2.9. Throat of Access

2.4. ROAD SAFETY

ROAD CRASH HISTORY REVIEW

A review of the road crash history at the key points (intersections, access points etc.) of the relevant road network for the proposed haulage route was undertaken using the road crash data available from the Queensland Globe database, with the assessment completed for the available data range (2001-2018). The fatal crashes and incidents requiring hospitalization along in the vicinity of the Capricorn Highway / Power Station Road interchange are shown in **Figure 2.5**, while a summary of the details of the identified road crash data is provided in **Table 2.3**.

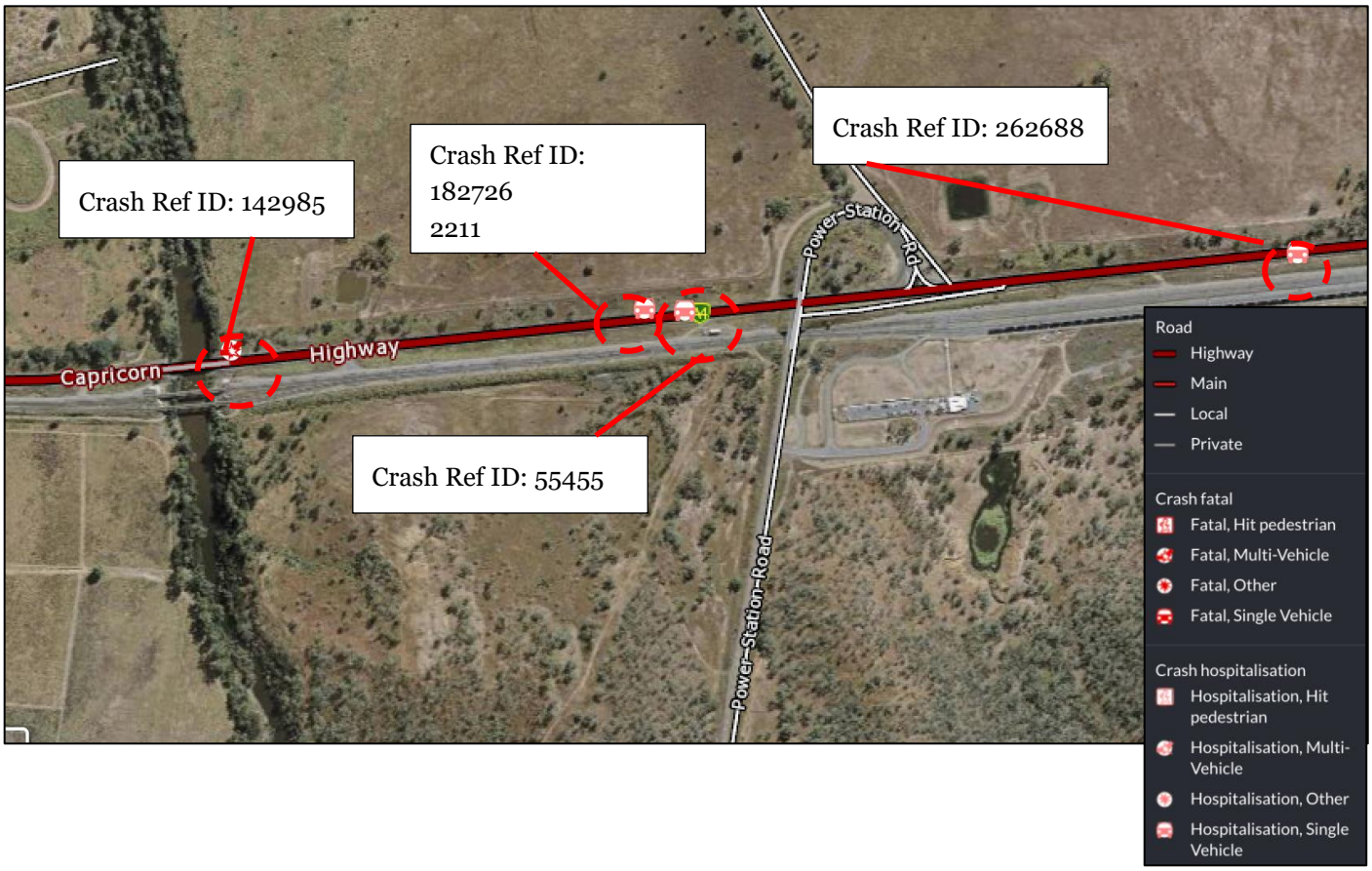


Figure 2.5 Road Crash Locations – Stanwell Quarry to the Capricorn Highway

Table 2.3 Summary of Road Crash History (2001-2018)

Crash Ref. No.	Crash Year	Crash Severity	Crash Type	DCA Description	Crash Description
Capricorn Highway, vicinity of Power Station Road					
142985	2009	Fatal	Multi-vehicle	506 – Veh's overtaking: overtake right turn	Overtaking same direction
2211	2001	Hospitalisation	Single Vehicle	705 - Off Path-Straight: Out of control on C'way	Out of control on straight
55455	2007	Hospitalisation	Single Vehicle	804 - Off Path-Curve: Off C'way Lt Bend Hit Obj	Off carriageway on curve hit object
262688	2016	Hospitalisation	Single Vehicle	704 - Off Path-Right off C'way hit object	Off carriageway on straight, hit object

The results of the above analysis indicate that no one traffic movement along the proposed road haulage route can be considered a specific safety risk, with incidents along the route being sporadic and inconsistent (i.e. not as a result of a specific traffic conditions).

As such it is not expected that any specific road safety risks are present along the proposed haulage route that would greatly impact on the traffic movements associated with the proposed Stanwell Quarry haulage operation.

2.5. PAVEMENT CONDITIONS

PAVEMENT CONDITION

The existing condition of the road pavements on Power Station Road has been assessed based on pavement roughness data provided by RCC. This data was recorded for 10m sections along the road link and was measured as values of International Roughness Index (or IRI), with the raw pavement roughness data included for reference in **Appendix B**.

For the purpose of this assessment, the measure of roughness for the road links was converted from IRI to NAASRA roughness to enable the TMR pavement impact assessment methodology to be utlised to assess the proposed haulage operation. This conversion was completed using the following equation from TMR's *Material Testing Manual Part 11: Pavements,* with the resultant pavement roughness calculations are provided in **Appendix D**.

$$\mathbf{N\ (counts/km) = (26.49\ IRI) - 1.27}$$

Using the converted pavement data, the road links were then divided into sections of homogenous pavement conditions based on similar roughness, with the indicative pavement sections identified for Power Station Road shown in **Figure 2.6**.

Based on the information provided in **Figure 2.6**, the existing condition of the identified homogenous pavement sections of Power Station Road are summarised in **Table 2.4** below.

Table 2.4 Existing Pavement Condition (NAASRA Roughness)

	Lane	RoadName	SurveyDate	RUN	BeginChainage	EndChainage	Interval	LaneIRI	NAASRAQc	SurveySpeed
SECTION 1 (A)	1	Power Station Road	10/8/19	1	0	268.24	268.24	4.41	128.00	37.30
SECTION 2 (B)	1	Power Station Road	10/8/19	1	269.24	307.18	37.94	4.76	125.00	43.10
SECTION 3 (C)	1	Power Station Road	10/8/19	1	307.18	1037.14	729.96	3.98	107.00	67.50
SECTION 4 (D)	1	Power Station Road	10/8/19	1	1037.14	1327.56	290.42	4.21	108.00	80.00
SECTION 5 (E)	1	Power Station Road	10/8/19	1	1327.56	2120.23	792.67	3.95	103.00	78.80
SECTION 6 (F)	1	Power Station Road	10/8/19	1	2120.23	3440.5	1320.27	3.66	95.00	74.90
SECTION 7 (G0	1	Power Station Road	10/8/19	1	3440.5	3584.09	143.59	3.69	97.00	75.50
SECTION 8 (H)	1	Power Station Road	10/8/19	1	3584.09	3890.47	306.38	3.93	104.00	74.00
SECTION 9 (I)	1	Power Station Road	10/8/19	1	3890.47	4033.5	143.03	3.79	99.00	72.30



Figure 2.6 Power Station Road – Homogenous Pavement Sections (CH0.00 – CH4.033)

PAVEMENT LOADINGS

In addition to the assessment of the current pavement conditions, estimates were also generated for the forecast background pavement loadings for each of the identified road segments on Power Station Road and the Capricorn Highway. Traffic loads on the pavement are defined in terms of ESA for granular pavements and Standard Axle Repetitions (SAR) for other pavement types. For the assessment of the Power Station Road segment of the route, it was assumed that all relevant road segments will be granular pavements, with SAR adopted for the route along the SCR.

The traffic loadings (ESAs and SARs) for the background traffic heavy vehicle component were calculated based on the heavy vehicle percentages identified in the provided traffic data for the relevant sections of the road network, utilising the following assumptions:

- The existing percentage of heavy vehicles identified in the provided traffic count data will be maintained in future years.
- ESAs per Heavy Vehicle (ESAs/HV) rates of 3.2 ESAs/HV were adopted for the purpose of the assessment based on advice previously received from TMR for all road not forming part of the Bruce Highway.
- SARs per Heavy Vehicle (SAR/HV) rates of 3.2 SAR_4/HV were adopted for calculating background SARs along the Capricorn Highway

A summary of the current (2022) background ESAs calculated along Power Station Road and the Capricorn Highway are provided in **Table 2.5** and **Table 2.6**.

Table 2.5 Estimated (2022) Background Traffic Loadings (ESAs) along Power Station Road

Segment ID	AADT Segment		Base Data Year	Base Year HV % & Volume		10 Yr GR %	2022 HV Volumes		ESAs / HV	No. Days	Background ESAs (2022)	
	Start (km)	End (km)		Gaz	A-Gaz		Gaz	A-Gaz			Gaz	A-Gaz
				32	32							
Power Station Road												
-	0.000	4.033	2016	20.1%	20.1%	1.00	34	34	3.2	365	39,712	39,712

Table 2.6 Estimated (2022) Background Traffic Loadings (ESAs) along The Capricorn Highway

Segment ID	AADT Segment		Base Data Year	Base Year HV Volume		10 Yr GR %	2022 HV Volumes		ESAs / HV	No. Days	Background ESAs (2022)	
	Start (km)	End (km)		Gaz	A-Gaz		Gaz	A-Gaz			Gaz	A-Gaz
Capricorn Highway												
61457	13.37	17.86	2020	481	399	1.00	491	407	3.2	365	573,488	475,376
60040	17.86	51.62	2020	322	394	1.00	328	402	3.2	365	383,104	469,536

PROPOSED DEVELOPMENT DETAILS

3.1. OPERATIONAL DETAILS

Based on information provided by the proponent (AMCOR) it is understood that the proposed development will result in the following parameters in relation to the road haulage component:

- The quantity of material to be transported between the Stanwell Quarry and the Capricorn Highway will be up to 444,000 TPa (an additional 194,000 TPa);
- The proposed road haulage operations are understood to occur over a period of approximately 300 days per year;
- Hours of operation for the road haulage operations are proposed to be daylight hours only (assumed 12 hours per day) between Monday and Saturday inclusive;
- It is understood that the materials will be transported using a truck and dog truck configuration; and
- As previously identified, the haulage vehicles will travel between the Stanwell Quarry and the Capricorn Highway.

3.2. PROPOSED ACCESS AND PARKING

INTERNAL SITE FACILITIES

It is noted that no details were provided regarding the proposed haulage vehicle movements internally, therefore no assessment has been undertaken regarding the expected vehicle paths within the Stanwell Quarry site.

DEVELOPMENT TRAFFIC

4.1. TRAFFIC GENERATION

As previously identified, the Stanwell Quarry will transport up to 444,000 tonnes of material over approximately 300 days per year.

Further to this, the proponent provided the following information regarding the anticipated traffic movements associated with the proposed road haulage operations:

General Operational Comments

- The haulage operations will occur during daylight hours only (assumed 12 hours.
- The material will be hauled by truck and dog combination.
- The typical payloads per vehicle for the truck and dog combination is 31.0 tonnes, accounting for the use of general mass limits for the vehicles.

Based on the general operational information above, an estimate of the expected daily and peak hour transport vehicle movements can be established as shown in **Table 4.1** below.

Table 4.1 Transport Vehicle Generation – Road Haulage Scenarios (194,000 tonnes)

Haulage Scenario	Haulage Tonnage
	194,000
Days per year	300
Tonnage per day	647
No. Truck and 4 Dog per day	**21**
Hours per day	12
Tonnage per hour	54
No. Truck and 4 Dog per hour	**2**

From the results above, it can be seen that based on 300 days per year, the daily transport rate is expected to be in the vicinity of 647 tonnes per day.

Adopting the daily transport rates for each haulage scenario and the identified transport vehicle payloads, the proposed road haulage operations are anticipated to generate up to **21 truck and dog** haulage vehicle round trip movements along Power Station Road. Note these trips have been calculated based on advice that haulage will be carried out during daylight hours only (assumed 12 hours/day).

4.2. DEVELOPMENT TRAFFIC VOLUMES ON THE NETWORK

Based on the information identified above, it can be seen that the proposed road haulage operations are anticipated to generate up to 21 round trip haulage vehicles per day (42 trips total).

In terms of the peak hour distribution of the haulage vehicle traffic volumes, based on the identified 12 hour work day, the additional traffic volumes along haulage route is anticipated to be in the order of 2 trips in each direction (4 trips total) of travel per peak hour.

IMPACT ASSESSMENT AND MITIGATION

Based on the information provided above, it was determined that the critical elements of the surrounding road network in terms of the potential impact of the development proposal are as follows:

- The identified road link of Power Station Road forming the proposed transport route (Ch 0.000 to Ch 4.033)
- The identified road link of the Capricorn Highway forming the proposed transport route (ID: 61457, 60040)

Further assessment of the impact of the development proposal on these road network elements is provided in the following sections.

5.1. WITH AND WITHOUT DEVELOPMENT TRAFFIC VOLUMES

ROAD LINK VOLUMES

As previously noted, the quantity of additional material to be transported along Power Station Road between the Stanwell Quarry and the Capricorn Highway is approximately 194,000 TPa.

The proposed haulage vehicle has been confirmed to be a Truck and Dog truck configuration. Summary of the calculated percentage increase in daily traffic volumes on the relevant road links as a result of the development proposal is shown in **Appendix E** and **Appendix G**.

INTERSECTION VOLUMES

As previously identified in **Table 4.1** (refer **Section 4** above), the additional traffic volumes from the proposed road haulage operations are expected to be a maximum of **2 inbound and 2 outbound** heavy vehicle movements during each hour of operation of the site (including both AM and PM peak hours) along critical sections of the route.

5.2. INTERSECTION IMPACT ASSESSMENT AND MITIGATION

As previously identified, the proposed haulage operation is anticipated to lead to a maximum increase in peak hour traffic volumes of **2 inbound and 2 outbound heavy vehicle movements** along the overall transport route.

Based on this minimal increase in peak hour traffic volumes, which equates to one heavy vehicle movement every 15 minutes, and the relatively low existing volumes anticipated at the intersections, the impact of the proposed road haulage operations on the operation (including vehicle delay) of Power Station Road, is anticipated to be negligible.

5.3. ROAD LINK CAPACITY ASSESSMENT AND MITIGATION

Based on detailed road link volumes calculations shown as **Appendix E** and **Appendix G** it is expected that the additional traffic volumes generated by the proposed haulage operation will be in the order of **21 heavy vehicles per day**. These additional traffic movements exceed the standard 5% increase trigger, however, the increase is marginal in the context of the capacity of Power Station Road.

It is however noted that the high percentage of traffic volume increase identified for these road sections is predominantly due to the low background traffic volumes, with the additional daily traffic volumes generated by the proposed road haulage operations estimated to be in the order of 2 inbound and 2 outbound vehicle movement within the peak hour expected.

Based on the low background and relatively low development traffic volumes identified it is anticipated that the existing configuration of Power Station Road link will be adequate to accommodate the resultant “post development” volumes and that sufficient “capacity” is available on the surrounding road network to cater for the additional trips generated by the proposed haulage operation.

5.4. PAVEMENT IMPACT ASSESSMENT AND MITIGATION

The assessment of potential pavement impacts of the development proposal involves a comparison of the pavement loading ESAs associated with the background traffic volumes on the relevant road links, to the ESAs estimated to be generated by the additional heavy vehicles associated with the proposed haulage operations.

As stated previously, it is proposed that material will be transported via a truck and dog combination.

Table 5.1 below shows the assumed configurations of the design haulage vehicle, as well as the average loaded and unloaded ESAs/HV values for the vehicle configurations (noting the assumption that the vehicles will travel between the Stanwell Quarry and the Capricorn Highway loaded and return back to the Stanwell Quarry unloaded). The ESAs/HV values for the pavement impact calculations along with the Council controlled road have been calculated from first principals assuming the adoption of General Mass Limits (GML), with the relevant calculations included for reference as **Appendix F**.

Table 5.1 Assumed Vehicle Configurations and ESA/HV Values

Vehicle Class	Vehicle Configuration	Payload (tonnes / HV)	Average Loaded ESAs/HV	Average Unloaded ESAs/HV
Truck + (4) Dog – 19 metres PBS Lvl 1 GML		31.0	6.11	0.53

The comparison of the background and development pavement loadings along the identified transport route has been undertaken based the above vehicle, with a summary of the results for Power Station Road and the relevant section of the Capricorn Highway provided in **Tables 5.2 and 5.3**, and further details of the calculations undertaken provided for reference in **Appendix G**. As shown in Table 5.3, the proposal will not exceed the 5% impact threshold along the SCR. It is noted that development traffic along the SCR has been estimated to distribute evenly (50% / 50% distribution) to the east and west of the Power Station Road intersection.

Table 5.2 Pavement Loading Comparison – Power Station Road

Yearly Haulage (tonne)	Background ESAs		Truck + (4) Dog Haulage Vehicle			
			Proposal ESAs Truck + Dog		% Increase from Background	
	Gaz	A-Gaz	Gaz	A-Gaz	Gaz	A-Gaz
Power Station Road (Ch 0.000 – 4.033)						
194,000	39,712	39,712	38,492	3,340	96.9%	8.4%

Table 5.3 Pavement Loading Comparison – Capricorn Highway

Yearly Haulage (tonne)	Route ID	Background ESAs		Truck + (4) Dog Haulage Vehicle			
				Proposal ESAs Truck + Dog		% Increase from Background	
		Gaz	A-Gaz	Gaz	A-Gaz	Gaz	A-Gaz
Capricorn Highway							
194,000	41457	573,488	475,376	1,670	19,246	0.3%	4.0%
194,000	60040	383,104	469,536	19,246	1,670	5.0%	0.4%

The results in the **Table 5.2** above indicates that the additional heavy vehicle movements associated with the proposed road haulage operations are expected to lead to increases in pavement loadings on the identified sections of Power Station Road above the recommended 5% impact trigger.

As such pavement impact contribution calculations were undertaken using the DTMR Fitzroy District spreadsheet method, which is generally accepted as the standard methodology for local government-controlled roads. Further details of the calculations undertaken are provided for reference in **Appendix G**, with the resultant pavement maintenance and rehabilitation contributions estimate to offset the impacts of the identified haulage scenarios for the development proposal on Power Station Road summarised in **Table 5.4** below.

Table 5.4 Recommended Development Proposal Pavement Contributions – Power Station Road

Haulage Scenario	Power Station Road Pavement Contribution (cents/tonne) Ch 0.000 to Ch 4.033 (4km)
	Truck + (4) Dog Combination
194,000 tonnes (300 days)	66.88

In light of the information provided above, and resultant contribution to offset the increase in maintenance and rehabilitation requirements, the applicant has requested that a more reasonable contribution be considered based on the current utilization of the route by the quarry and other users.

The applicant has expressed concern that the recommended contribution rate of 66.88 cents per tonne exceeds the feasibility of the development proposal. A contribution rate of approximately 20 cents per tonne is considered a more feasible contribution for the proposed operation, when applied only for the increased tonnage associated with the development proposal and it is requested that Council accept a lower rate of 20 cents per tonne based on the relatively short distance between the quarry access and the SCR.

CONCLUSIONS AND RECOMMENDATIONS

6.1. SUMMARY OF IMPACTS AND MITIGATION MEASURES PROPOSED

TRAFFIC IMPACTS

Based on the relatively low background traffic numbers and the relatively small increase in traffic numbers (up to a maximum of 21 vpd in each direction) as a result of the development proposal, it is anticipated that the proposed Stanwell Quarry road haulage operations will have a minimal impact on the traffic operation of the identified mid-block sections of Power Station Road with adequate capacity expected to be available on the road link to cater for the additional heavy vehicles.

Further to this, the increase in production volumes were estimated to only lead to a maximum increase in peak hour traffic volumes of 2 inbound and 2 outbound heavy vehicles at the Power Station Road / Stanwell Quarry Access and the Capricorn Highway / Power Station Road intersections. As such, the impact of the proposed operations on the relevant intersections (including vehicle delay) on the surrounding road network can also be deemed to be negligible.

PAVEMENT IMPACTS

In addition to the traffic assessments completed, an assessment of the expected pavement impacts to the relevant section of Power Station Road was undertaken for the development proposal.

This assessment identified that the heavy vehicle movements associated with the development proposal are expected to lead to increases in pavement loadings on the identified section of Power Station Road, with all values above the recommended 5% impact trigger for the truck and dog haulage scenario assessed.

As such, pavement impact contribution calculations were undertaken for the proposed increase using the standard DTMR Fitzroy District spreadsheet methodology, with the following contribution values calculated to be recommended to offset the identified pavement impacts of the proposed Stanwell Quarry Road haulage operations on the impacted section of Power Station Road:

Table 6.1: Recommended Development Proposal Pavement Contributions – Power Station Road

Haulage Scenario	Power Station Road Pavement Contribution (cents/tonne) Ch 0.000 to Ch 4.033 (4km)
	Truck + (4) Dog Combination
194,000 tonnes (300 days)	66.88

RECOMMENDATIONS

In light of the information provided above, and resultant contribution to offset the increase in maintenance and rehabilitation requirements, the applicant has requested that a more reasonable contribution be considered based on the current utilization of the route by the quarry and other users.

The applicant has expressed concern that the recommended contribution rate of 66.88 cents per tonne exceeds the feasibility of the development proposal. A contribution rate of approximately 20 cents per tonne is considered a more feasible contribution for the proposed operation, when applied only for the increased tonnage associated with the development proposal and it is requested that Council accept a lower rate of 20 cents per tonne based on the relatively short distance between the quarry access and the SCR.

Based on the above, with a suitable/alternative road contribution to offset the expected increased maintenance and rehabilitation requirements, the additional traffic generated by the development proposal by the proposed haulage operations will have a minor impact on the adjacent road network.

It is noted that some minor maintenance should be carried out on the Power Station Road / Quarry access intersection throat as well as the far side of the road where the presence of existing edge wear is pronounced. However, a full BAR treatment will not be provided given the guard rail currently in place at this location.

APPENDIX A

Raw Traffic Count Data (RCC) & TMR Census Database

ROCKHAMPTON CITY COUNCIL (POWER STATION ROAD)

Street	Link_Start	Link_End	Location_Description	Start_Date	End_Date	COUNT_Year	AADT_B	Percentage_Comm_B
Power Station Road	Capricorn Hwy	Power Station entrance	Chainage 3.45km	18/11/2016	1/12/2016	2016	313.2	20.1

Posted_Speed_Limit	Speed_85th	AM_Peak	AM_Peak_Volume	PM_Peak	PM_Peak_Volume	Pace_15km_h	Perc_in_Pace	Mean_Speed
100	100.1	0600 - 0700	80.7	1600 - 1700	62.9	86 - 101	61.79	91.1

DEPARTMENT OF TRANSPORT AND MAIN ROADS (CAPRICORN HIGHWAY)

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Traffic Year 2020

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Road Segments Summary - All Vehicles

Region	Segment Start Tdist	Segment End Tdist	Site	Site Tdist	Description	AADT			VKT (Millions)			Data Year	Page
						G	A	B	G	A	B		
404	0.000 km	5.690 km	60039	2.635 km	190m E of Nelson St, Fairy Bower	8,289	7,503	15,792	17.21501	15.58261	32.79762	2018	2
404	5.690 km	13.367 km	60010	9.200 km	500m E of Malchi Nine Mile Rd, Gracemere	2,530	2,375	4,905	7.08933	6.65500	13.74433	2020	3
404	13.367 km	17.856 km	61457	14.556 km	185m W of Meteor Park Rd, Kabra	2,014	1,980	3,994	3.29991	3.24420	6.54411	2020	4
404	17.856 km	51.620 km	60040	44.067 km	450m S of Huxham Ln, E of Westwood	1,719	1,712	3,431	21.18472	21.09845	42.28316	2020	5
404	51.620 km	73.350 km	60045	64.035 km	800m W of Ohl Rd, Gogango	1,492	1,465	2,957	11.83372	11.61957	23.45330	2020	6
404	73.350 km	106.380 km	150050	91.120 km	400m E of Boolburra Edungalba Rd, Gainsf	1,435	1,471	2,906	17.30029	17.73430	35.03459	2020	7
								Totals	77.92297	75.93413	153.85710		

Road Segments Summary - Heavy Vehicles only

VKT totals are calculated only if traffic class data is available for all sites.

Region	Segment Start Tdist	Segment End Tdist	Site	Site Tdist	Description	HV AADT						HV VKT (Millions)			Data Year	Page
						G		A		B						
						AADT	HV %	AADT	HV %	AADT	HV %	G	A	B		
404	0.000 km	5.690 km	60039	2.635 km	190m E of Nelson St, Fairy Bower	892	10.76%	1,949	25.98%	2,841	17.99%	1.85255	4.04778	5.90033	2018	2
404	5.690 km	13.367 km	60010	9.200 km	500m E of Malchi Nine Mile Rd, Gracemere	578	22.85%	525	22.11%	1,103	22.49%	1.61962	1.47111	3.09072	2020	3
404	13.367 km	17.856 km	61457	14.556 km	185m W of Meteor Park Rd, Kabra	481	23.88%	399	20.15%	880	22.03%	0.78811	0.65376	1.44187	2020	4
404	17.856 km	51.620 km	60040	44.067 km	450m S of Huxham Ln, E of Westwood	322	18.73%	394	23.01%	716	20.87%	3.96828	4.85560	8.82388	2020	5
404	51.620 km	73.350 km	60045	64.035 km	800m W of Ohl Rd, Gogango	450	30.16%	293	20.00%	743	25.13%	3.56915	2.32391	5.89307	2020	6
404	73.350 km	106.380 km	150050	91.120 km	400m E of Boolburra Edungalba Rd, Gainsf	355	24.74%	245	16.66%	600	20.65%	4.27986	2.95371	7.23357	2020	7
											Totals	16.07758	16.30586	32.38344		

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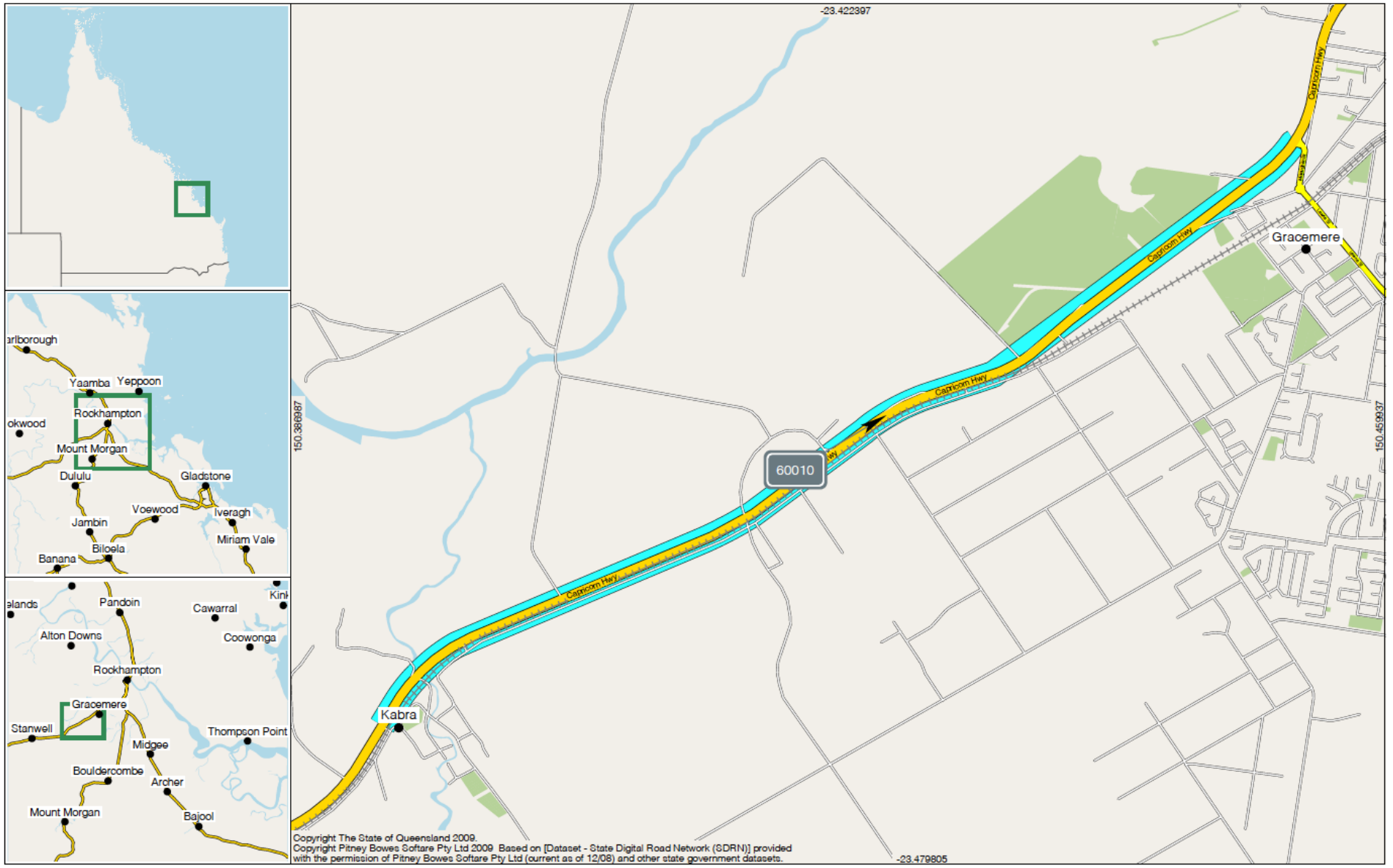
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Site 60010. Point 260001012. 500m E of Malchi Nine Mile Rd, Gracemere.

9.20 km

The width of each Road Segment is proportional to its AADT.



5.69 km

Start Point 260000026. Capricorn Hwy to Duaring@ Gavial-G'mere Rd.

13.37 km

End Point 260000027. Cap Hwy to Duaringa @ E Williams Rd.

This report shows Annual Average Daily Traffic values (AADTs). Because the AADT values are converted to whole numbers, there will be occasional inaccuracies due to rounding. These inaccuracies are statistically insignificant.

	Annual Segment Growth		
	Based on 1 year's data	Based on 5 years' data	Based on 10 years' data
G	-0.98%	-0.64%	-0.37%
A	-1.08%	-0.98%	-0.72%
B	-1.03%	-0.81%	-0.54%

All Vehicles (00)

G	2,530	100%
A	2,375	100%
B	4,905	100%

Light Vehicles (0A)

G	1,951	77.11%
A	1,851	77.94%
B	3,802	77.51%

Heavy Vehicles (0B)

G	578	22.85%
A	525	22.11%
B	1,103	22.49%

Short Vehicles (1A)

G	1,951	77.11%
A	1,851	77.94%
B	3,802	77.51%

Trucks and Buses (1B)

G	344	13.60%
A	269	11.33%
B	613	12.50%

Articulated Vehicles (1C)

G	106	4.19%
A	109	4.59%
B	215	4.38%

Road Trains (1D)

G	128	5.06%
A	147	6.19%
B	275	5.61%

Short 2-Axle Vehicles (2A)

G	1,868	73.83%
A	1,759	74.06%
B	3,627	73.94%

Short Vehicles Towing (2B)

G	83	3.28%
A	92	3.87%
B	175	3.57%

2-Axle Trucks and Buses (2C)

G	283	11.19%
A	212	8.93%
B	495	10.09%

3-Axle Trucks and Buses (2D)

G	52	2.06%
A	49	2.06%
B	101	2.06%

4-Axle Trucks (2E)

G	9	0.36%
A	8	0.34%
B	17	0.35%

3-Axle Articulated (2F)

G	10	0.40%
A	9	0.38%
B	19	0.39%

4-Axle Articulated (2G)

G	15	0.59%
A	14	0.59%
B	29	0.59%

5-Axle Articulated (2H)

G	12	0.47%
A	13	0.55%
B	25	0.51%

6-Axle Articulated (2I)

G	69	2.73%
A	73	3.07%
B	142	2.90%

B Double (2J)

G	106	4.19%
A	124	5.22%
B	230	4.69%

Double Road Trains (2K)

G	22	0.87%
A	23	0.97%
B	45	0.92%

Triple Road Trains (2L)

G	0	0%
A	0	0%
B	0	0%

A

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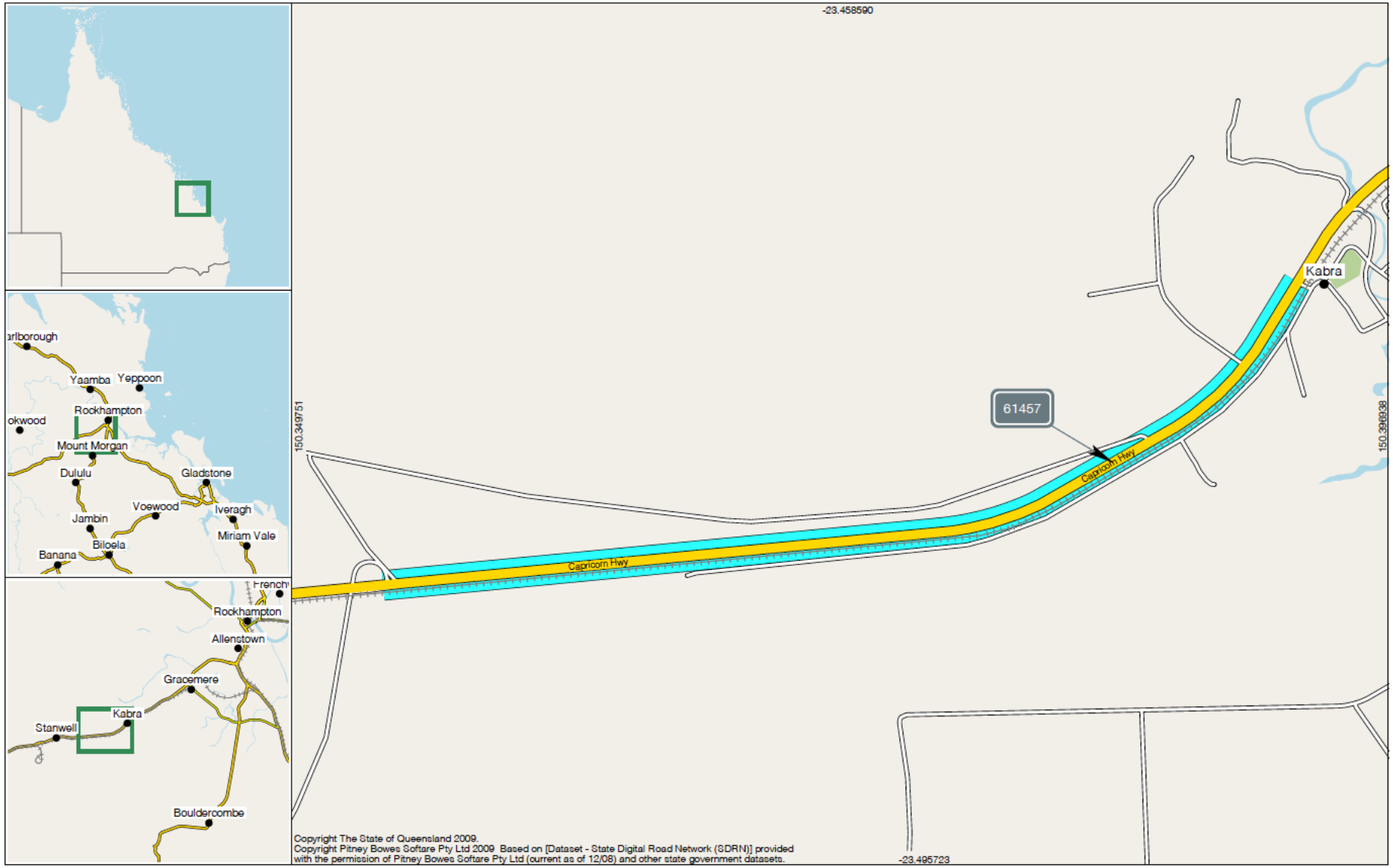
AADT Segment Analysis Report (Complete)

Area 404 - Fitzroy District

Road Section 16A - CAPRICORN HIGHWAY (ROCKHAMPTON - DUARINGA)

Traffic Year 2020 - Data Collection Year 2020

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AADT Segment Analysis Report (Complete)

Area 404 - Fitzroy District

Road Section 16A - CAPRICORN HIGHWAY (ROCKHAMPTON - DUARINGA)

Traffic Year 2020 - Data Collection Year 2020

TARS

Site 61457. Point 260001013. Cap Hwy WiM (TC-61457), Kabra 185m W Meteor Park Rd.

14.56 km

The width of each Road Segment is proportional to its AADT.

13.37 km

Start Point 260000027. Cap Hwy to Duaringa @ E Williams Rd.

17.86 km

End Point 260000065. Cap Hwy to Duaringa @ Powerstation Rd.

This report shows Annual Average Daily Traffic values (AADTs). Because the AADT values are converted to whole numbers, there will be occasional inaccuracies due to rounding. These inaccuracies are statistically insignificant.

	Annual Segment Growth		
	Based on 1 year's data	Based on 5 years' data	Based on 10 years' data
G	-2.94%	-2.62%	
A	-1.88%	-2.04%	
B	-2.42%	-2.34%	

All Vehicles (00)

G	2,014	100%
A	1,980	100%
B	3,994	100%

Light Vehicles (0A)

G	1,532	76.07%
A	1,582	79.90%
B	3,114	77.97%

Heavy Vehicles (0B)

G	481	23.88%
A	399	20.15%
B	880	22.03%

Short Vehicles (1A)

G	1,532	76.07%
A	1,582	79.90%
B	3,114	77.97%

Trucks and Buses (1B)

G	251	12.46%
A	175	8.84%
B	426	10.67%

Articulated Vehicles (1C)

G	87	4.32%
A	81	4.09%
B	168	4.21%

Road Trains (1D)

G	143	7.10%
A	143	7.22%
B	286	7.16%

Short 2-Axle Vehicles (2A)

G	1,451	72.05%
A	1,492	75.35%
B	2,943	73.69%

Short Vehicles Towing (2B)

G	81	4.02%
A	90	4.55%
B	171	4.28%

2-Axle Trucks and Buses (2C)

G	209	10.38%
A	137	6.92%
B	346	8.66%

3-Axle Trucks and Buses (2D)

G	34	1.69%
A	30	1.52%
B	64	1.60%

4-Axle Trucks (2E)

G	8	0.40%
A	8	0.40%
B	16	0.40%

3-Axle Articulated (2F)

G	11	0.55%
A	9	0.45%
B	20	0.50%

4-Axle Articulated (2G)

G	13	0.65%
A	10	0.51%
B	23	0.58%

5-Axle Articulated (2H)

G	9	0.45%
A	8	0.40%
B	17	0.43%

6-Axle Articulated (2I)

G	54	2.68%
A	54	2.73%
B	108	2.70%

B Double (2J)

G	105	5.21%
A	104	5.25%
B	209	5.23%

Double Road Trains (2K)

G	38	1.89%
A	39	1.97%
B	77	1.93%

Triple Road Trains (2L)

G	0	0%
A	0	0%
B	0	0%

APPENDIX B

Raw Pavement Condition (Roughness) Data (CHRC)

CLIENT_ID	Direction	Lane	RoadName	BeginDescription	enddescription	SurveyDate	RUN	BeginChainage	EndChainage	Interval	LeftIRI	RiGhtIRI	LaneIRI
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	0	10	10	2.7	1.9	2.3
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	10	20	10	11.38	9.07	10.87
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	20	30	10	10.74	9.56	10.15
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	30	40	10	3.7	4	3.85
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	40	50	10	8.32	6	7.16
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	50	60	10	7.26	4.33	5.79
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	60	70	10	4.88	5.57	5.23
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	70	80	10	3.5	5.96	4.73
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	80	90	10	3.95	3.25	3.6
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	90	100	10	2.13	5.43	3.78
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	100	110	10	3.48	4.53	4
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	110	120	10	3.98	4.08	4.03
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	120	130	10	5.32	4.29	4.8
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	130	140	10	8.3	6.25	7.28
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	140	150	10	6.05	4.68	5.37
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	150	160	10	5.32	4.49	4.9
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	160	170	10	6.45	3.56	5
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	170	180	10	4.11	3.77	3.94
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	180	190	10	4.27	3.41	3.84
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	190	200	10	3.92	2.2	3.06
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	200	210	10	3.82	3.2	3.51
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	210	220	10	4.47	2.99	3.73
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	220	230	10	2.79	3.71	3.25
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	230	240	10	4.72	4.76	4.74
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	240	250	10	4.67	2.61	3.64
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	250	260	10	4.93	4.63	4.78
006218A	5	1	Power Station Road	Capricorn Highway	Ch 0.268	10/8/19	1	260	268.24	8.24	3.37	4.58	3.98
006218C	5	1	Power Station Road	CH 0.364 END OF BRIDGE	CH 0.396 CIS	10/8/19	1	269.24	279.24	10	5.52	6.7	6.11
006218C	5	1	Power Station Road	CH 0.364 END OF BRIDGE	CH 0.396 CIS	10/8/19	1	279.24	289.24	10	3.72	3.57	3.65
006218C	5	1	Power Station Road	CH 0.364 END OF BRIDGE	CH 0.396 CIS	10/8/19	1	289.24	299.24	10	6.27	5.39	5.83
006218C	5	1	Power Station Road	CH 0.364 END OF BRIDGE	CH 0.396 CIS	10/8/19	1	299.24	307.18	7.94	4.25	2.67	3.46
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	307.18	317.18	10	2.15	1.65	1.9
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	317.18	327.18	10	1.81	2	1.9
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	327.18	337.18	10	1.48	2.72	2.1
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	337.18	347.18	10	1.9	1.99	1.94
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	347.18	357.18	10	1.88	1.85	1.86
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	357.18	367.18	10	2.46	2.15	2.3
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	367.18	377.18	10	8.78	6.58	7.68
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	377.18	387.18	10	5.96	6.55	6.26
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	387.18	397.18	10	6.49	3.33	4.91
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	397.18	407.18	10	8.28	2.15	5.21
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	407.18	417.18	10	6.54	3.55	5.05
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	417.18	427.18	10	5.56	3.26	4.41
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	427.18	437.18	10	3.89	3.47	3.68
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	437.18	447.18	10	4.45	2.69	3.57
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	447.18	457.18	10	6.58	6.4	6.49
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	457.18	467.18	10	6.07	4.87	5.47
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	467.18	477.18	10	4.73	5.14	4.94
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	477.18	487.18	10	1.51	4.44	2.98
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	487.18	497.18	10	4.23	2.05	3.14
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	497.18	507.18	10	5.95	2.63	4.29
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	507.18	517.18	10	3.19	4.97	4.08
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	517.18	527.18	10	7.39	6.77	7.08
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	527.18	537.18	10	5.84	4.89	5.37
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	537.18	547.18	10	5.16	4.63	4.9
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	547.18	557.18	10	4.35	3.64	4
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	557.18	567.18	10	3.85	4	3.93
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	567.18	577.18	10	3.96	3.1	3.53
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	577.18	587.18	10	4.54	1.77	3.16
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	587.18	597.18	10	3.13	3.2	3.17
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	597.18	607.18	10	3.16	3.31	3.24
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	607.18	617.18	10	5.73	2.83	4.28
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	617.18	627.18	10	4.95	3.78	4.36
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	627.18	637.18	10	2.88	3	2.94
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	637.18	647.18	10	2.87	4.93	3.9
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	647.18	657.18	10	3.19	3.94	3.56
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	657.18	667.18	10	2.4	3.18	2.79
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	667.18	677.18	10	2.72	2.8	2.76
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	677.18	687.18	10	3.86	4.01	3.93
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	687.18	697.18	10	2.47	3.08	2.78
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	697.18	707.18	10	4.8	3.21	4
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	707.18	717.18	10	3.34	5.74	4.54
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	717.18	727.18	10	3.17	4.84	4.01
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	727.18	737.18	10	3.05	3.96	3.51
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	737.18	747.18	10	5.03	2.84	3.94
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	747.18	757.18	10	2.98	3.69	3.34
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	757.18	767.18	10	2.98	2.96	2.97
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	767.18	777.18	10	2.12	1.77	1.94
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	777.18	787.18	10	2.27	2.59	2.43
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	787.18	797.18	10	3.96	5.02	4.49
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	797.18	807.18	10	5.07	8.44	6.75
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	807.18	817.18	10	5.26	6.06	5.66
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	817.18	827.18	10	5	6.76	5.88
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	827.18	837.18	10	3.95	7.23	5.59
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	837.18	847.18	10	3.4	3.56	3.48
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	847.18	857.18	10	2.71	3.19	2.95
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	857.18	867.18	10	8.49	4.53	6.51
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	867.18	877.18	10	5.65	5.15	5.4
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	877.18	887.18	10	2.38	3.7	3.04
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	887.18	897.18	10	2.14	3.69	2.92
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	897.18	907.18	10	3.53	3.29	3.41
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	907.18	917.18	10	2.13	5.77	3.95
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	917.18	927.18	10	2.86	3.5	3.18
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	927.18	937.18	10	3.14	5.76	4.45
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	937.18	947.18	10	3.82	3.36	3.59
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	947.18	957.18	10	3.16	4.15	3.66
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	957.18	967.18	10	2.85	4.06	3.46
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	967.18	977.18	10	11.23	9.59	10.41
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	977.18	987.18	10	5.1	6.03	5.56
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	987.18	997.18	10	3.44	6.07	4.76
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	997.18	1007.18	10	4.02	2.07	3.05
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	1007.18	1017.18	10	3.3	3.51	3.4
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	1017.18	1027.18	10	2.25	4.28	3.26
006218D	5	1	Power Station Road	CH 0.396 CIS	CH 1.138 CIS	10/8/19	1	1027.18	1037.14	9.96	3.81	4.09	3.95
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1037.14	1047.14	10	3.8	2.75	3.28
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1047.14	1057.14	10	3.71	3.4	3.56
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1057.14	1067.14	10	4.44	4.55	4.5
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1067.14	1077.14	10	3.69	4.15	3.92
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1077.14	1087.14	10	2.67	3.74	3.2
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1087.14	1097.14	10	4.95	4.23	4.59
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1097.14	1107.14	10	2.84	2.66	2.75
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1107.14	1117.14	10	4.57	2.98	3.78
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1117.14	1127.14	10	5.37	2.94	4.15
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1127.14	1137.14	10	3.24	3.43	3.33
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1137.14	1147.14	10	3.44	3.32	3.38
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1147.14	1157.14	10	11.38	5.24	8.39
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1157.14	1167.14	10	3.79	7.07	5.43
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1167.14	1177.14	10	6.9	4.9	5.9
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1177.14	1187.14	10	3.8	4.67	4.24
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1187.14	1197.14	10	5.11	4.84	4.98
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1197.14	1207.14	10	5.27	4.27	4.77
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1207.14	1217.14	10	3.28	3.54	3.41
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1217.14	1227.14	10	2.41	4.04	3.22

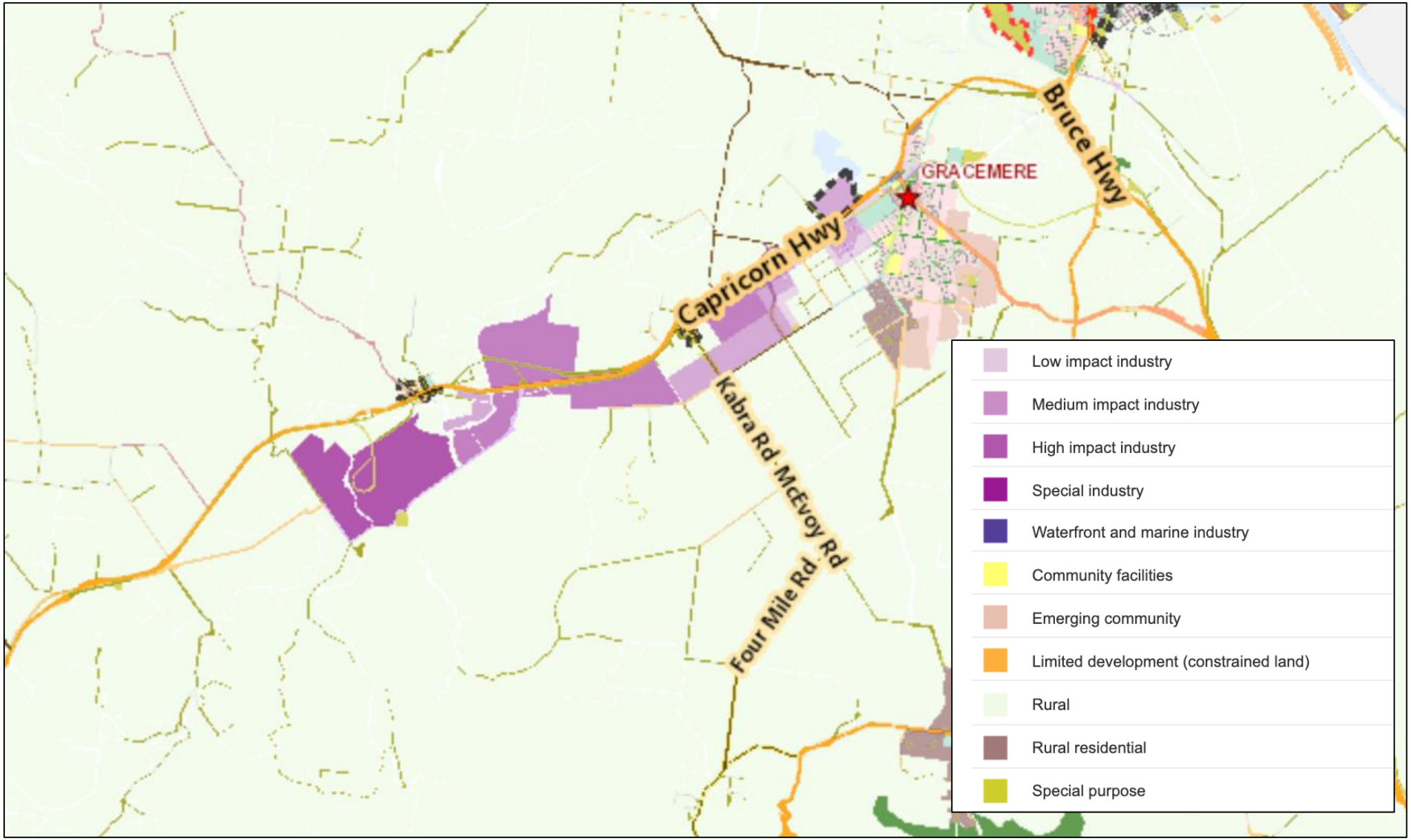
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1227.14	1237.14	10	3.74	3.46	3.6
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1237.14	1247.14	10	4.14	3.53	3.83
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1247.14	1257.14	10	4.5	2.04	3.27
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1257.14	1267.14	10	3.82	3.32	3.57
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1267.14	1277.14	10	3.83	2.53	3.18
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1277.14	1287.14	10	7.71	4.9	6.31
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1287.14	1297.14	10	6.33	5.94	6.14
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1297.14	1307.14	10	5.37	4.05	4.71
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1307.14	1317.14	10	6.55	3.22	4.89
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1317.14	1327.14	10	3.66	2.52	3.09
006218E	5	1	Power Station Road	CH 1.138 CIS	CH 1.418 CIS	10/8/19	1	1327.14	1327.56	0.42	NULL	NULL	NULL
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1327.56	1337.56	10	3.13	3.29	3.21
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1337.56	1347.56	10	3.23	3.29	3.26
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1347.56	1357.56	10	2.98	2.72	2.85
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1357.56	1367.56	10	2.21	2.21	2.21
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1367.56	1377.56	10	3.47	3.12	3.29
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1377.56	1387.56	10	2.29	1.8	2.04
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1387.56	1397.56	10	3.65	3.18	3.42
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1397.56	1407.56	10	7.44	4.14	5.79
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1407.56	1417.56	10	5.86	5.53	5.69
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1417.56	1427.56	10	5.09	4.24	4.66
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1427.56	1437.56	10	3.62	3.44	3.53
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1437.56	1447.56	10	3.29	5.28	4.29
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1447.56	1457.56	10	5.2	3.12	4.16
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1457.56	1467.56	10	6.42	2.93	4.68
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1467.56	1477.56	10	4.23	3.61	3.92
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1477.56	1487.56	10	3.22	2.59	2.91
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1487.56	1497.56	10	4.62	3.01	3.81
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1497.56	1507.56	10	6.86	3.06	4.96
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1507.56	1517.56	10	3.5	3.41	3.45
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1517.56	1527.56	10	4.27	2.02	3.15
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1527.56	1537.56	10	3.57	3.52	3.55
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1537.56	1547.56	10	2.7	2.3	2.5
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1547.56	1557.56	10	3.22	4.03	3.63
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1557.56	1567.56	10	3.58	3.26	3.42
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1567.56	1577.56	10	7.18	8.23	7.7
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1577.56	1587.56	10	6.53	7.91	7.22
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1587.56	1597.56	10	7.36	7.62	7.49
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1597.56	1607.56	10	3.19	5.37	4.28
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1607.56	1617.56	10	1.91	3.27	2.59
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1617.56	1627.56	10	2.86	3.48	3.17
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1627.56	1637.56	10	5.69	4.68	5.18
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1637.56	1647.56	10	3.19	4.88	4.03
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1647.56	1657.56	10	2.87	3.66	3.27
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1657.56	1667.56	10	3.61	3.4	3.5
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1667.56	1677.56	10	2.9	4.19	3.55
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1677.56	1687.56	10	2.26	2.61	2.43
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1687.56	1697.56	10	3.48	4.85	4.17
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1697.56	1707.56	10	2.89	4.3	3.6
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1707.56	1717.56	10	3.15	4.49	3.82
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1717.56	1727.56	10	4.33	4.84	4.58
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1727.56	1737.56	10	4.27	3.99	4.13
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1737.56	1747.56	10	2.24	2.59	2.42
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1747.56	1757.56	10	3.49	2.71	3.1
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1757.56	1767.56	10	4.41	3.08	3.75
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1767.56	1777.56	10	4.11	4.3	4.2
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1777.56	1787.56	10	3.29	3.88	3.58
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1787.56	1797.56	10	2.92	3.32	3.12
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1797.56	1807.56	10	3.93	3.63	3.78
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1807.56	1817.56	10	3.71	4.78	4.24
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1817.56	1827.56	10	4.17	1.68	2.92
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1827.56	1837.56	10	3.49	3.05	3.27
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1837.56	1847.56	10	3.38	3.96	3.67
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1847.56	1857.56	10	4.31	3.96	4.14
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1857.56	1867.56	10	6.27	3.68	4.97
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1867.56	1877.56	10	8.4	4.89	6.65
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1877.56	1887.56	10	10.86	7.21	9.03
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1887.56	1897.56	10	7.29	6.36	6.83
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1897.56	1907.56	10	4.83	4.27	4.55
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1907.56	1917.56	10	8	4.18	6.09
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1917.56	1927.56	10	11.38	5.15	8.28
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1927.56	1937.56	10	4.31	4.09	4.2
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1937.56	1947.56	10	3.96	2.92	3.44
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1947.56	1957.56	10	3.46	2.56	3.01
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1957.56	1967.56	10	2.36	3.02	2.69
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1967.56	1977.56	10	1.8	2.09	1.95
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1977.56	1987.56	10	2.31	2.56	2.44
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1987.56	1997.56	10	6.02	3.09	4.55
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	1997.56	2007.56	10	4.99	4.1	4.55
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2007.56	2017.56	10	9.55	3.31	6.43
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2017.56	2027.56	10	3.08	2.54	2.81
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2027.56	2037.56	10	3.23	2.54	2.88
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2037.56	2047.56	10	2.81	2.96	2.88
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2047.56	2057.56	10	4.57	1.91	3.24
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2057.56	2067.56	10	2.26	2.79	2.52
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2067.56	2077.56	10	3.17	3.71	3.44
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2077.56	2087.56	10	2.53	3.29	2.91
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2087.56	2097.56	10	2.2	3.02	2.61
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2097.56	2107.56	10	1.72	2.31	2.02
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2107.56	2117.56	10	2.82	2.83	2.83
006218F	5	1	Power Station Road	CH 1.418 CIS	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	10/8/19	1	2117.56	2120.23	2.67	2.78	2.48	2.63
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2120.23	2130.23	10	2.69	2.86	2.78
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2130.23	2140.23	10	4.33	3.25	3.79
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2140.23	2150.23	10	3.45	3.13	3.29
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2150.23	2160.23	10	2.17	3.34	2.75
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2160.23	2170.23	10	4.07	2.77	3.42
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2170.23	2180.23	10	2.91	2.74	2.82
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2180.23	2190.23	10	4.81	2.43	3.62
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2190.23	2200.23	10	2.73	2.84	2.78
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2200.23	2210.23	10	2.28	4.21	3.25
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2210.23	2220.23	10	2.32	3.54	2.93
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2220.23	2230.23	10	2.83	2.06	2.45
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2230.23	2240.23	10	3.4	3.11	3.26
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2240.23	2250.23	10	4.66	3.04	3.85
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2250.23	2260.23	10	5.83	4.32	5.08
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2260.23	2270.23	10	9.65	3.58	6.61
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2270.23	2280.23	10	7.4	3.97	5.68
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2280.23	2290.23	10	4.22	2.97	3.6
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2290.23	2300.23	10	6.15	1.97	4.06
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2300.23	2310.23	10	2.96	2.72	2.84
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2310.23	2320.23	10	2.58	3	2.79
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2320.23	2330.23	10	2.59	3.12	2.85
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2330.23	2340.23	10	2.84	2.73	2.78
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2340.23	2350.23	10	2.47	1.9	2.19
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2350.23	2360.23	10	3.17	4.2	3.69
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2360.23	2370.23	10	2.5	2.63	2.57
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2370.23	2380.23	10	2.39	2.18	2.29
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2380.23	2390.23	10	2.78	2.27	2.53
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2390.23	2400.23	10	4.29	3.47	3.88
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2400.23	2410.23	10	2.65	3.53	3.09
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2410.23	2420.23	10	3.03	3.52	3.28
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2420.23	2430.23	10	1.71	5.42	3.56
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2430.23	2440.23	10	3.49	2.35	2.92
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2440.23	2450.23	10	6.4	3.03	4.72

006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2450.23	2460.23	10	4.96	4.69
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2460.23	2470.23	10	5.01	4.6
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2470.23	2480.23	10	4.88	6.46
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2480.23	2490.23	10	3.48	5.09
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2490.23	2500.23	10	3.48	3.07
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2500.23	2510.23	10	3.21	4.4
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2510.23	2520.23	10	3.02	3.47
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2520.23	2530.23	10	4.98	2.49
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2530.23	2540.23	10	2.68	2.28
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2540.23	2550.23	10	2.13	2.54
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2550.23	2560.23	10	2.66	2.59
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2560.23	2570.23	10	2.19	2.54
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2570.23	2580.23	10	3.4	4.01
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2580.23	2590.23	10	4.4	2.5
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2590.23	2600.23	10	2.48	2.35
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2600.23	2610.23	10	3.25	4.11
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2610.23	2620.23	10	2.59	3.39
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2620.23	2630.23	10	2.91	3.74
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2630.23	2640.23	10	2.91	4.34
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2640.23	2650.23	10	2.94	5.4
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2650.23	2660.23	10	1.88	4.78
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2660.23	2670.23	10	1.65	4.51
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2670.23	2680.23	10	3.98	2.6
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2680.23	2690.23	10	3.8	2.82
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2690.23	2700.23	10	3.48	3.18
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2700.23	2710.23	10	4	2.37
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2710.23	2720.23	10	3.66	3.4
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2720.23	2730.23	10	3.33	3.78
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2730.23	2740.23	10	4.38	5.79
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2740.23	2750.23	10	6.37	5.41
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2750.23	2760.23	10	4.72	4.32
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2760.23	2770.23	10	4.52	6
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2770.23	2780.23	10	4.78	3.93
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2780.23	2790.23	10	4.49	2.69
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2790.23	2800.23	10	5.34	4.78
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2800.23	2810.23	10	3.18	3.44
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2810.23	2820.23	10	2.77	4.91
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2820.23	2830.23	10	4.73	2.62
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2830.23	2840.23	10	4.39	4.41
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2840.23	2850.23	10	4.3	5.67
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2850.23	2860.23	10	4.01	5.56
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2860.23	2870.23	10	4.44	8.87
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2870.23	2880.23	10	5.15	5.42
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2880.23	2890.23	10	3.19	3.92
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2890.23	2900.23	10	3.95	3.83
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2900.23	2910.23	10	3.93	4.69
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2910.23	2920.23	10	3.53	2.8
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2920.23	2930.23	10	4.99	3.69
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2930.23	2940.23	10	4.19	5.58
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2940.23	2950.23	10	4.2	3.34
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2950.23	2960.23	10	5.91	6.71
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2960.23	2970.23	10	3.04	4.95
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2970.23	2980.23	10	7.16	3.86
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2980.23	2990.23	10	6.37	5.77
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	2990.23	3000.23	10	2.43	4.75
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3000.23	3010.23	10	3.75	4.07
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3010.23	3020.23	10	3.83	4.99
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3020.23	3030.23	10	2.9	3.13
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3030.23	3040.23	10	3.13	2.13
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3040.23	3050.23	10	1.44	3.51
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3050.23	3060.23	10	2.1	3.03
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3060.23	3070.23	10	3.08	3.83
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3070.23	3080.23	10	2.98	3.44
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3080.23	3090.23	10	2.93	3.25
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3090.23	3100.23	10	3.56	3.42
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3100.23	3110.23	10	2.52	1.85
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3110.23	3120.23	10	2.75	3.27
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3120.23	3130.23	10	2.68	2.44
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3130.23	3140.23	10	2.8	2.96
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3140.23	3150.23	10	2.33	2.54
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3150.23	3160.23	10	1.96	3.16
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3160.23	3170.23	10	5.4	5.86
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3170.23	3180.23	10	3.55	6.18
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3180.23	3190.23	10	3.67	4.81
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3190.23	3200.23	10	3.08	5.47
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3200.23	3210.23	10	2.45	4.01
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3210.23	3220.23	10	2.68	3.61
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3220.23	3230.23	10	2.9	4.98
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3230.23	3240.23	10	3.04	3.06
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3240.23	3250.23	10	3.3	4.34
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3250.23	3260.23	10	1.88	3.46
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3260.23	3270.23	10	1.93	2.5
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3270.23	3280.23	10	2.04	3.07
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3280.23	3290.23	10	3.76	6.67
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3290.23	3300.23	10	4.96	5.24
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3300.23	3310.23	10	2.95	3.33
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3310.23	3320.23	10	3	2.34
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3320.23	3330.23	10	4.67	2.89
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3330.23	3340.23	10	3.95	3.38
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3340.23	3350.23	10	2.88	3.28
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3350.23	3360.23	10	2.84	3.69
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3360.23	3370.23	10	3.44	4.95
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3370.23	3380.23	10	3.33	3.81
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3380.23	3390.23	10	3.79	3.49
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3390.23	3400.23	10	3.2	5.83
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3400.23	3410.23	10	1.88	2.25
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3410.23	3420.23	10	2.45	2.36
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3420.23	3430.23	10	3.12	4.76
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3430.23	3440.23	10	3.38	3.65
006218G	5	1	Power Station Road	CH 2.220 PROPERTY ENTRANCE #227 ON LEFT	CH 3.538 CIW	10/8/19	1	3440.23	3440.5	0.27	NULL	NULL
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3440.5	3450.5	10	3.16	3.76
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3450.5	3460.5	10	2.04	5.73
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3460.5	3470.5	10	2.8	6.43
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3470.5	3480.5	10	2.98	4.89
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3480.5	3490.5	10	2.05	2.66
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3490.5	3500.5	10	2.9	4.92
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3500.5	3510.5	10	3.61	3.46
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3510.5	3520.5	10	6.68	6.72
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3520.5	3530.5	10	3.22	4.33
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3530.5	3540.5	10	3.07	2.68
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3540.5	3550.5	10	2.45	2.95
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3550.5	3560.5	10	2.75	3.71
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3560.5	3570.5	10	2.2	4.1
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3570.5	3580.5	10	3.62	4.79
006218H	5	1	Power Station Road	CH 3.538 CIW	CH 3.680 CIW	10/8/19	1	3580.5	3584.09	3.59	2.12	4.07
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3584.09	3594.09	10	3.17	5.16
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3594.09	3604.09	10	3.66	7.19
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3604.09	3614.09	10	2.86	5.26
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3614.09	3624.09	10	3.04	3.2
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3624.09	3634.09	10	2.78	2.64
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3634.09	3644.09	10	2.75	3.29
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3644.09	3654.09	10	4.82	5.28
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3654.09	3664.09	10	7.08	6.36
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3664.09	3674.09	10	4.33	4.26

006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3674.09	3684.09	10	2.73	3.15	2.94
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3684.09	3694.09	10	2.85	2.79	2.82
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3694.09	3704.09	10	1.87	4.5	3.19
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3704.09	3714.09	10	2.79	2.11	2.45
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3714.09	3724.09	10	3.46	4.84	4.15
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3724.09	3734.09	10	4.26	2.92	3.59
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3734.09	3744.09	10	4.32	3.5	3.91
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3744.09	3754.09	10	3.9	5.86	4.88
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3754.09	3764.09	10	4.32	4.63	4.47
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3764.09	3774.09	10	5.48	4.26	4.87
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3774.09	3784.09	10	4.18	2.82	3.5
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3784.09	3794.09	10	5.16	4.24	4.7
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3794.09	3804.09	10	3.65	4.26	3.96
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3804.09	3814.09	10	4.14	4.17	4.16
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3814.09	3824.09	10	2.79	5.48	4.13
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3824.09	3834.09	10	4.74	5.07	4.91
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3834.09	3844.09	10	8.88	3.58	6.23
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3844.09	3854.09	10	3.58	6.38	4.98
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3854.09	3864.09	10	2.57	3.11	2.84
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3864.09	3874.09	10	2.73	2.87	2.8
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3874.09	3884.09	10	1.94	2.09	2.02
006218I	5	1	Power Station Road	CH 3.680 CIW	CH 3.984 CIW	10/8/19	1	3884.09	3890.47	6.38	2.68	2.41	2.55
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3890.47	3900.47	10	2.81	3.32	3.07
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3900.47	3910.47	10	2.85	2.38	2.61
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3910.47	3920.47	10	2.65	2.71	2.68
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3920.47	3930.47	10	2.39	2.63	2.51
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3930.47	3940.47	10	1.9	2.83	2.36
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3940.47	3950.47	10	2.85	4.4	3.63
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3950.47	3960.47	10	2.82	2.79	2.81
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3960.47	3970.47	10	7.27	3.19	5.23
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3970.47	3980.47	10	4.48	2.39	3.44
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3980.47	3990.47	10	5.71	5.17	5.44
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	3990.47	4000.47	10	4.83	3.61	4.22
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	4000.47	4010.47	10	4.05	6.84	5.44
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	4010.47	4020.47	10	4.45	5	4.73
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	4020.47	4030.47	10	5.28	4.31	4.8
006218J	5	1	Power Station Road	CH 3.984 CIW	CH 4.126 CIW	10/8/19	1	4030.47	4033.5	3.03	4.88	2.74	3.81

APPENDIX C

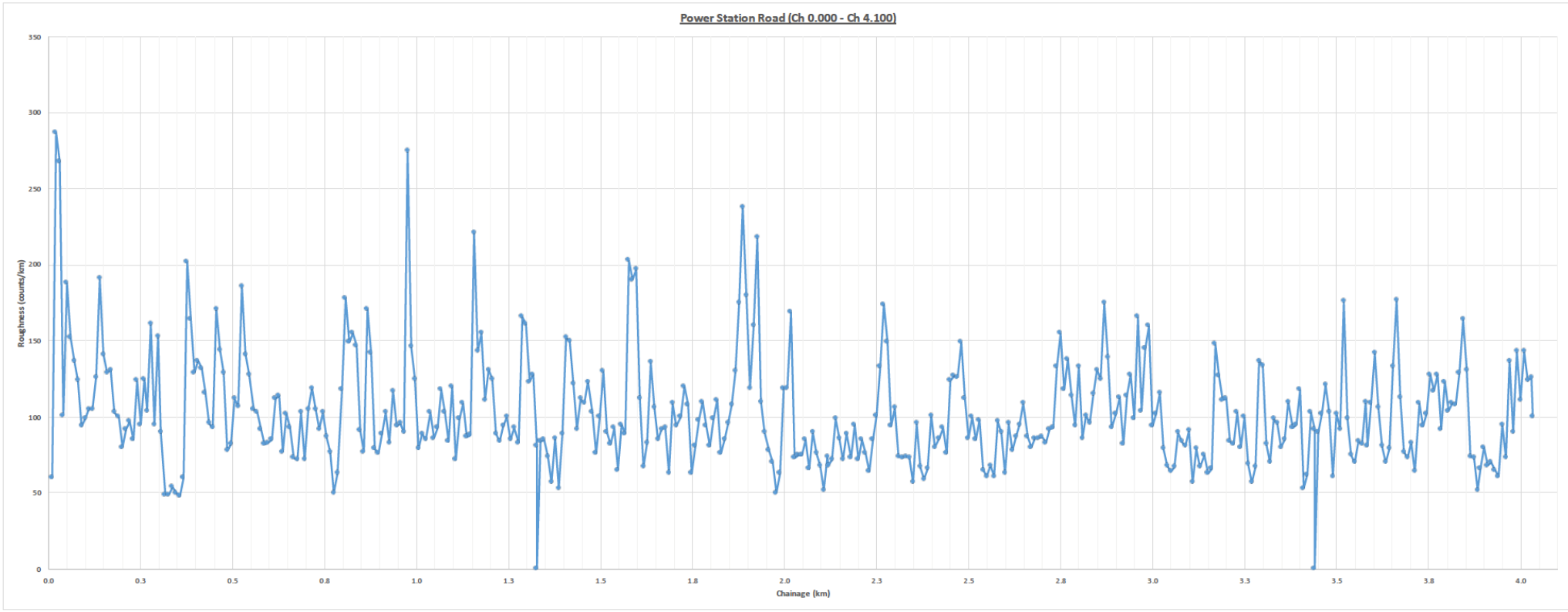
RCC Planning Scheme Zoning Mapping



APPENDIX D

Pavement Condition (Roughness) Calculations

D


Power Station Road (Ch 0.000 - Ch 4.100)
Roughness (counts/km)
350
300
250
200
150
100
50
0
0.0
0.3
0.5
0.8
1.0
1.3
1.5
1.8
2.0
2.3
2.5
2.8
3.0
3.3
3.5
3.8
4.0
Chainage (km)

APPENDIX E

Traffic Impact Calculations

Road ID	AADT Segment		Base Data Year	Base Year (2016) AADT				10 Yr. GR %	Background AADT (2022)				Proposed Annual Tonnage	Truck + Dog Haulage Vehicle (12 Months)		
	Start (km)	End (km)		Gaz	% HV	A-Gaz	% HV		Gaz		A-Gaz			Development Traffic (Daily)		
									Total	HV%	Total	HV%		Gaz	A-Gaz	Bi-Direction
Power Station Road																
-	0	3.45	2016	157	20.1	157	20.1	1	166	20.1	166	20.1	280,000	31	31	62

APPENDIX F

Pavement Impact Calculations

	Truck + 4 Dog	O OO	OO	OO				
	Axles Tyres	Single Single	Tandem Dual	Tandem Dual	Tandem Dual			Totals
	Legal Loading (t)	6.5	16.5	13.75	13.75			50.50 tonne
	Base Load / ESA	5.4	13.8	13.8	13.8			
Unloaded	Axle Group Load (t)	4.5	5	5	5			19.5 tonne
	ESA's	0.482	0.017	0.017	0.017			0.53 ESA
Loaded	Axle Group Load (t)	6.50	16.50	13.75	13.75			50.50 tonne
	ESA's [1]	2.099	2.044	0.986	0.986			6.11 ESA
	Payload =	31.0	tonne				ESA/t Payload =	0.0172 unloaded
	Max Legal Payload =	31.0	tonne [2]				ESA/t Payload =	0.1972 loaded

APPENDIX G

Pavement Impact Contribution Calculations

STANWELL QUARRY - 194,000t/yr (Truck - (4) Dog)

Developer Contribution Summary

Sect No.	Road No.	Road Name	Road Sections	Lgth (km)	Reduced Pvt Life To	Reduced Pvt Life From	Dev. Contribution (@ the PV Base Yr.) Rehab ($) To	Rehab ($) From	Mtce ($) To	Mtce ($) From	Total ($)
1	1	Power Station Rd	A	0.2682	3.6%	42.4%		$23,565	$2,216	$25,402	$51,183
2	2	Power Station Rd	B	0.0379	3.5%	41.9%		$3,103	$313	$3,593	$7,010
3	3	Power Station Rd	C	0.73	4.0%	48.5%		$162,823	$6,029	$69,127	$237,979
4	4	Power Station Rd	D	0.2904	4.1%	48.7%		$66,353	$2,399	$27,503	$96,254
5	5	Power Station Rd	E	0.7927	4.0%	47.8%		$160,644	$6,547	$75,065	$242,257
6	6	Power Station Rd	F	1.3203	3.9%	46.5%		$220,926	$10,905	$125,029	$356,860
7	7	Power Station Rd	G	0.1436	3.9%	46.8%		$25,205	$1,186	$13,598	$39,989
8	8	Power Station Rd	H	0.3064	4.0%	48.0%		$63,598	$2,531	$29,014	$95,142
9	9	Power Station Rd	I	0.143	3.9%	47.2%		$26,338	$1,181	$13,545	$41,065
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
			Totals [1] =	4.0			$0	$752,555	$33,308	$381,875	**$1,167,738**

Start of Development Traffic = 2022

Development Duration = 10 years

ESA Increase Trigger = 5.0%

Total Tonnage = 1,746,000 tonnes

Developer Contribution expressed as a Cost per Tonne (@ the PV Base Yr.)

cents / tonne = 66.88

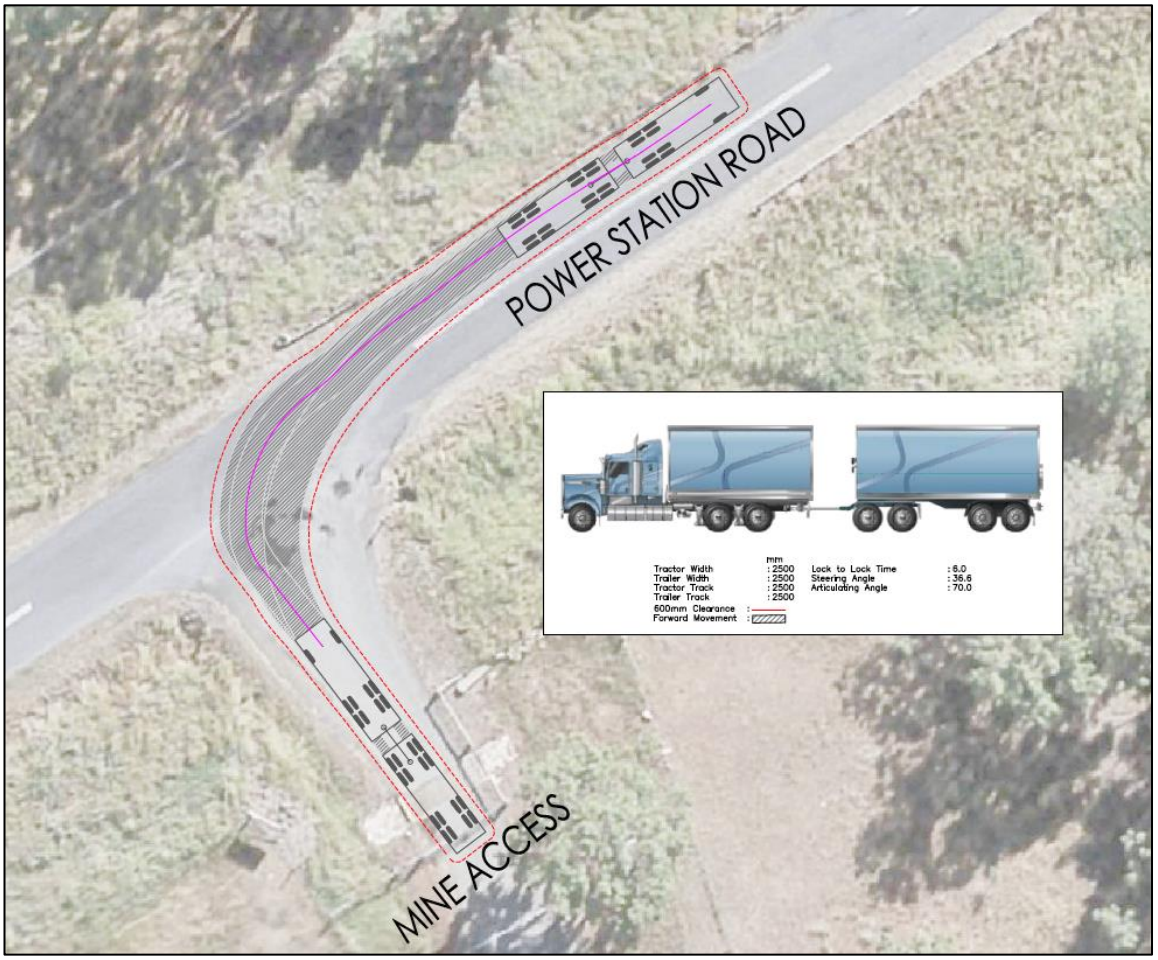
cents / tonne / km = 16.59

Protection Passord for all worksheets = mrd

[1] Includes only road sections that are subject to Development Generated Traffic > 5%

APPENDIX H

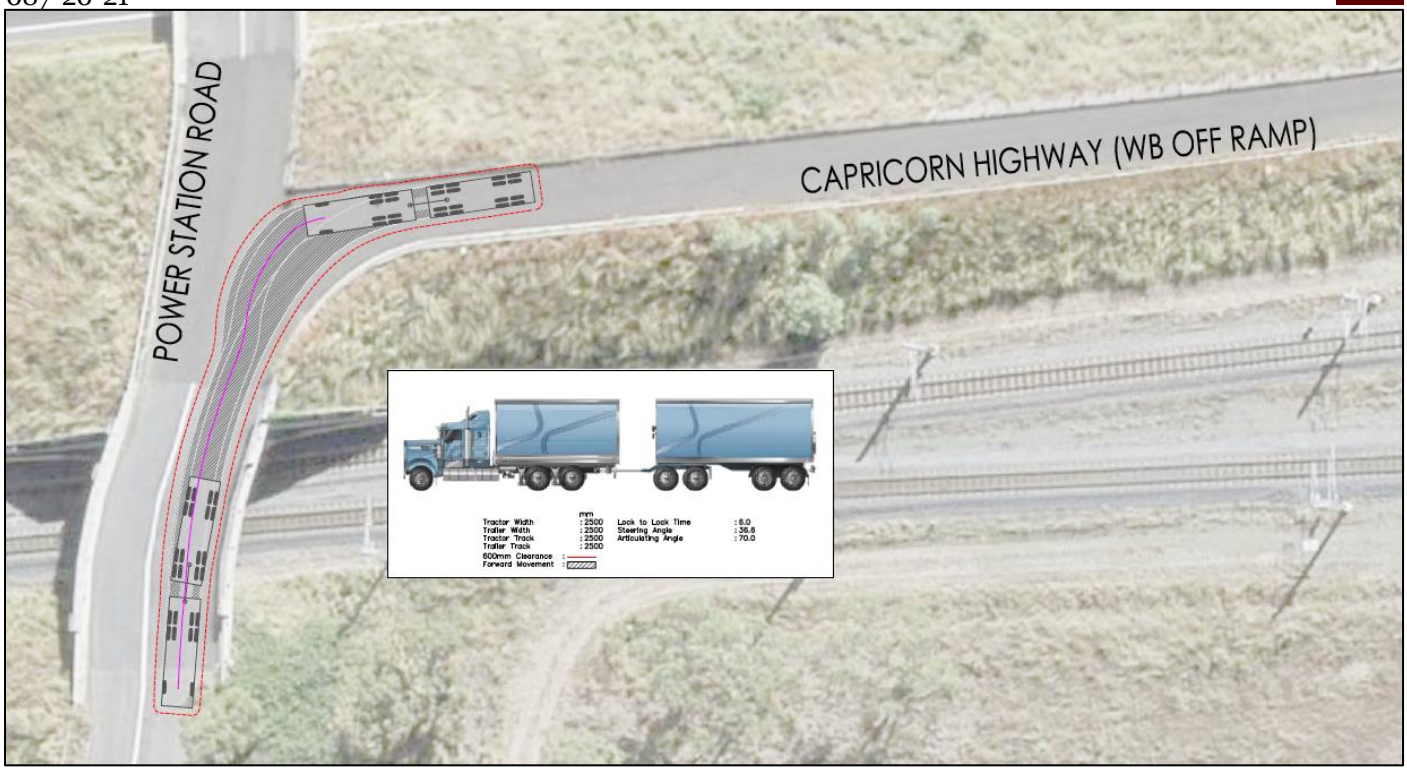
SWEPT PATH ANALYSIS

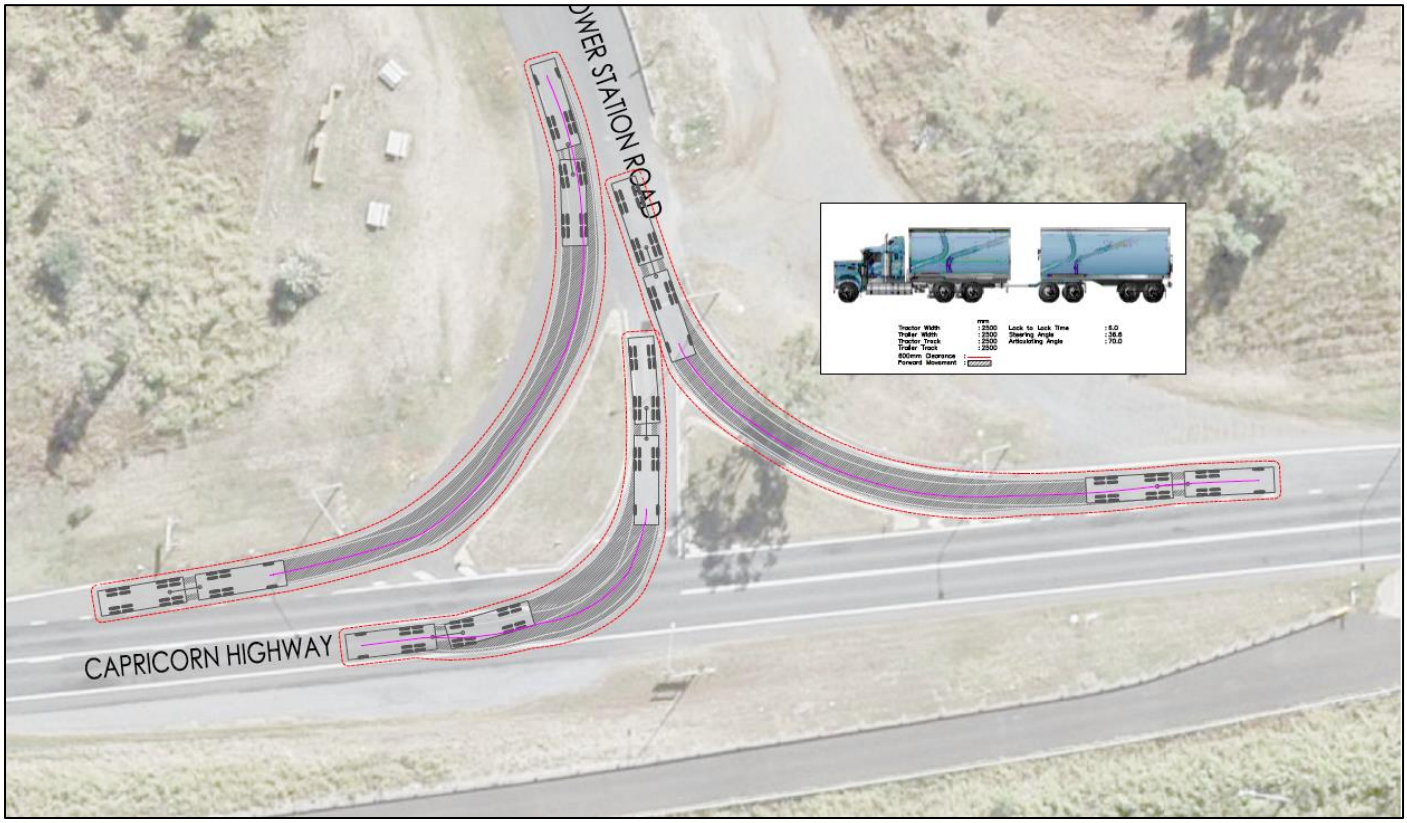




H


POWER STATION ROAD
CAPRICORN HIGHWAY
CAPRICORN HIGHWAY (WB OFF RAMP)
POWER STATION ROAD


POWER STATION ROAD
CAPRICORN HIGHWAY (WB OFF RAMP)
mm
Tractor Width : 2500
Trailer Width : 2500
Tractor Track : 2500
Trailer Track : 2500
600mm Clearance :
Forward Movement :
Lock to Lock Time : 6.0
Steering Angle : 36.8
Articulating Angle : 70.0


POWER STATION ROAD
CAPRICORN HIGHWAY
mm
Tractor Width : 2500
Trailer Width : 2500
Tractor Track : 2500
Trailer Track : 2500
600mm Clearance :
Forward Movement :
Lock to Lock Time : 6.0
Steering Angle : 36.8
Articulating Angle : 70.0



Ecological Assessment Report

Stanwell Quarry Expansion, Hume Road, Kabra, 4702
Prepared for AMCOR Quarries
30 April 2021

Job 10314

saunders havill group

Document control

Document: 10314
Stanwell Quarry Expansion, Hume Road, Kabra, 4702
Ecological Assessment Report (Issue B), prepared by Saunders Havill Group for AMCOR Quarries, dated March 2021.

Document issue

Issue	Date	Prepared by	Checked by
A	19 January 2021	LB	MM
B	30 April 2021	LB	MM

Prepared by
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ABN 24 144 972 949
www.saundershavill.com

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Acronyms

DAF	Department of Agriculture and Fisheries (Qld)
DAMS	Development Assessment Mapping System
DBH	Diameter and Breast Height
DES	Department of Environment and Science
DSDMIP	Department of State Development, Manufacturing, Infrastructure and Planning
EAR	Ecological Assessment Report
EPBC	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
EVNT	Endangered, Vulnerable or Near Threatened as listed under the NC Act
MCU	Material Change of Use
MLES	Matters of Local Environmental Significance
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
NC Act	Nature Conservation Act 1992
NCWR	Nature Conservation (Wildlife) Regulation 2006
PA	Planning Act 2016 (Qld)
PMST	Protected Matters Search Tool
PR	Planning Regulation 2017 (Qld)
ROL	Reconfiguration of a Lot
RRC	Rockhampton Regional Council
SARA	State Assessment Referral Agency (part of DSDMIP)
SPP	State Planning Policy 2017 (Qld)
VM Act	Vegetation Management Act 1999 (Qld)
SRI	Significant Residual Impact

1. Introduction

Saunders Havill Group was engaged by AMCOR Quarries and Concrete Pty Ltd to prepare an Ecological Assessment Report (EAR) for a proposed quarry expansion as part of Lot 1 on RP616642 located at Hume Road, Kabra, a property summary is provided in **Table 1**, which is intended to support the development application to Rockhampton Regional Council (RRC). This report provides a review of the site's ecological values in accordance with Commonwealth, State and Local legislation.

Contextually, the site is located in the Rockhampton Regional Council within the Brigalow Belt Bioregion (Mount Morgan Ranges Subregion and Fitzroy Catchment) and is zoned as Rural. The region generally experiences a subtropical climate, with a mean annual rainfall of 677.2mm (Stanwell Power Station, 3 kilometres north-west; BOM 2020). The site lies part way between Kabra and Stanwell, approximately 21km south-west of Rockhampton, Qld. (**Figure 1**). The proposed impact area is located in the southern extent of the property boundary (Lot 1 on RP616642), within the following coordinates (**Figure 2**):

- North-west: -23.524568°, 150.345791°
- North-east: -23.524253°, 150.355005°
- South-east: -23.526345°, 150.354717°
- South-west: -23.527116°, 150.345795°

1.1. Property summary

Table 1: Property summary

Address	294 Hume Road, Kabra
Size	Approx. 25.6 ha
Lots	Part of Lot 1 on RP616642
VM Act 1999	Category B - Remnant (Least concern, RE11.11.15/11.11.3/11.11.5) Category X - Non-remnant
MSES	Wildlife habitat (endangered or vulnerable) Regulated vegetation (essential habitat – *Cycas megacarpa*)
Koala Habitat	Outside of Koala Priority Area No Koala Habitat Area mapped on-site
LGA	Rockhampton Regional Council
Planning scheme / local plan	Rockhampton Regional Planning Scheme
Environmental overlays	MLES – General MSES – Wildlife habitat Waterways

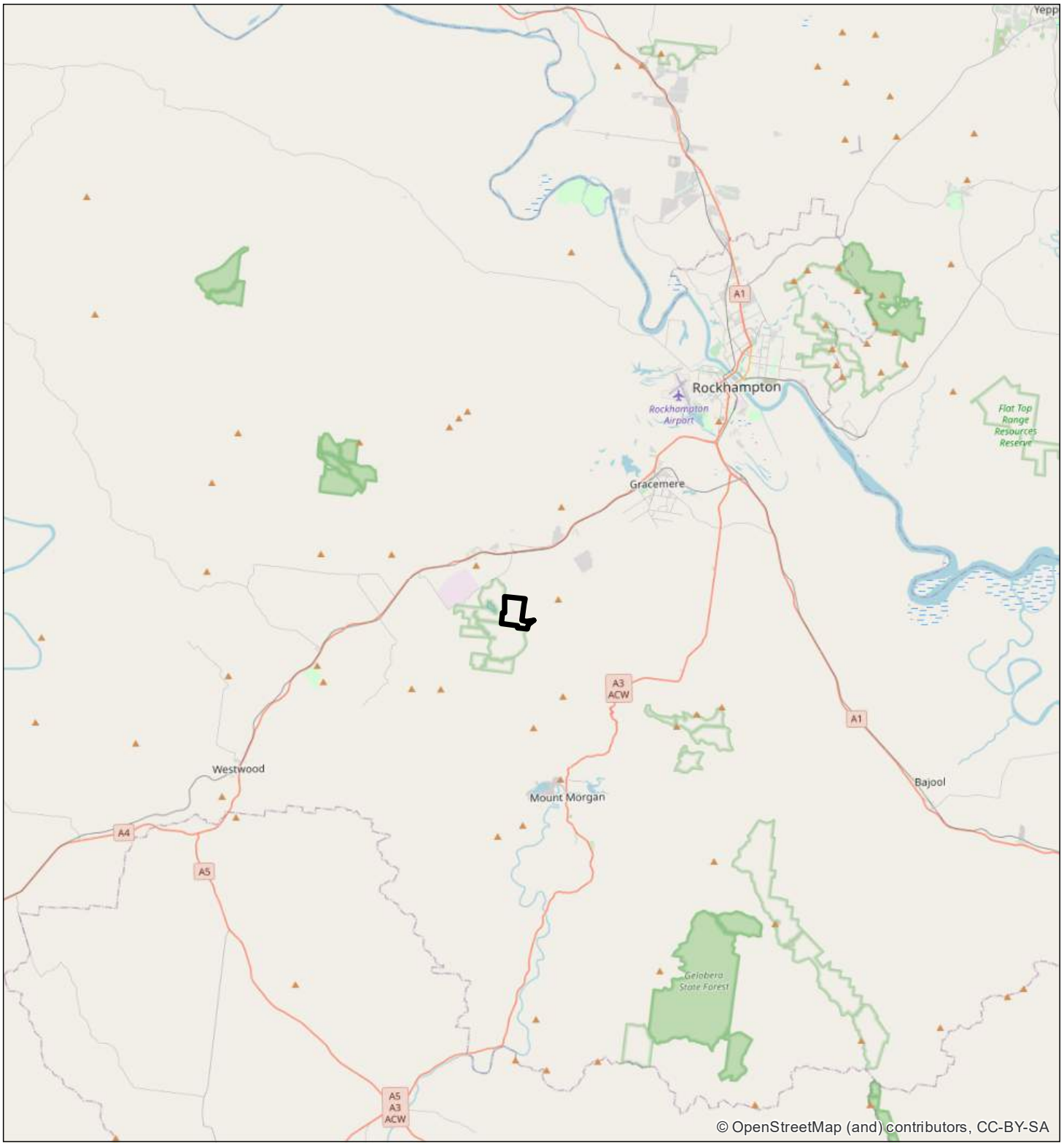
1.2. Purpose of the report

The purpose of this EAR is to present the outcomes of fauna surveys, identify additional environmental site constraints, assess the potential of the project to impact on ecological features and respond to relevant Rockhampton Regional Council Planning Scheme policies and codes.

These components include:

- Detailed fauna surveys including specifics on what was employed and why;
- Assess areas of potential ecological value including identifying areas potentially suitable for future restoration;
- Habitat delineation and indication of microhabitat location and availability;
- Identification of significant trees and stags;
- Identify Matters of Local, State and National Environmental Significance that may require a biodiversity offset; and
- On ground assessment of environmental values across the site.

This report was prepared in accordance with the requirements of the Rockhampton Regional Planning Scheme.



Legend

Site DCDB

Figure 1

Site Context

AMCOR Quarries

File ref. 10314 E Figure 1 Site Context A_
Date *11/12/2020*
Project *Hume Road, Kabra*

0 5 10 20 *km*

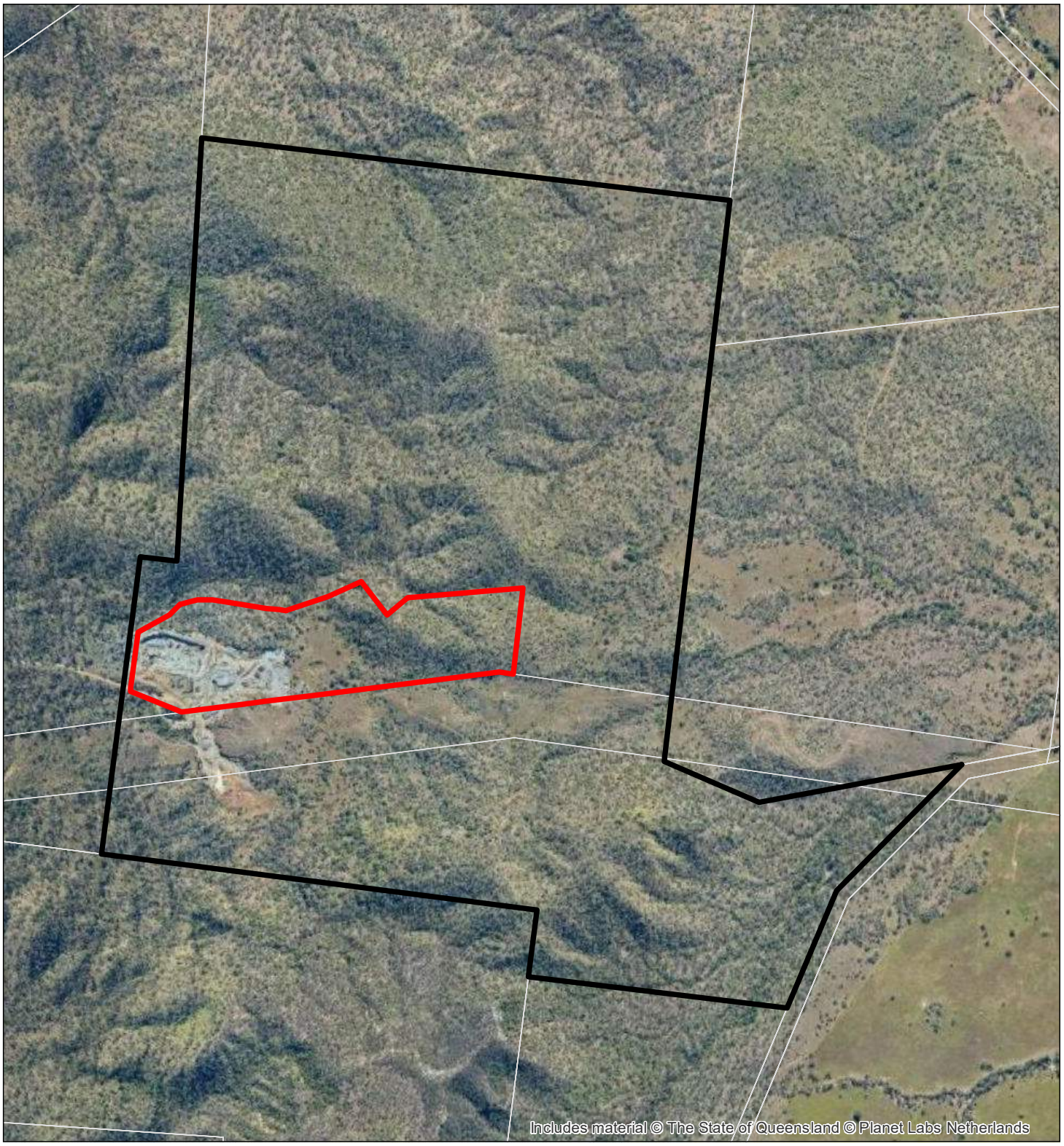
N

Scale (A4): 1:400,000 [GDA 1994 MGA Z56]

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Legend

- Site DCDB
- Imapct Area
- Qld DCDB

Figure 2

Site Aerial

AMCOR
Quarries

File ref. 10314 E Figure 2 Site Aerial A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

N

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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2. Ecological assessment methodology and process

The following steps were undertaken in the preparation of this assessment:

1. Desktop analysis;
2. Legislation and policy review;
3. Field survey;
4. Development analysis; and
5. Conclusion and recommendations.

Details of the methodology undertaken for each of the assessment phases is provided in the following sections.

2.1. Desktop analysis methodology

Prior to the commencement of field surveys, a desktop analysis was conducted of Commonwealth, State and Local environmental databases and overlay mapping. Desktop analysis searches included the following:

- Commonwealth Matters of National Environmental Significance protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on and around the site using the Protected Matters Search Tool (PMST);
- *Nature Conservation Act 1992* (NC Act) listed threatened species on and around the site using the Wildlife Online Database;
- Public environmental databases, including Atlas of Living Australia and BioMaps;
- State Government environmental overlay mapping, including:
    - Regulated Vegetation Maps under the *Vegetation Management Act 1999* (VM Act);
    - Flora Survey Trigger Areas under the NC Act;
    - Fish habitat and Waterway for Waterway Barrier Works under the *Fisheries Act 1994*;
    - Watercourses under the *Water Act 2000*;
    - Weeds under the *Biosecurity Act 2014*;
    - Coastal Development and Tidal Works (SARA Coastal Protection) under the Coastal Protection and Management Act 1995; and
    - Matters of State Environmental Significance under the State Planning Policy (SPP) (i.e. wetland protection areas, koala habitat, etc.); and relevant planning scheme documents and maps.
- Local Government (Rockhampton Regional Planning Scheme) environmental overlay mapping including:

- Biodiversity areas - coverage of MLES and MSES
- Waterways and wetlands

A review of aerial photography history was undertaken to assist with the broad delineation of vegetation communities and to identify historical patterns and their potential effects on current local vegetation communities.

2.2. Field survey methodology

Ecological field surveys were conducted on the subject site in the attempt to confirm presence of potential matters of ecological significance (MNES, MSES and MLES). Fauna surveys were conducted under the following permits held by Saunders Havill Group:

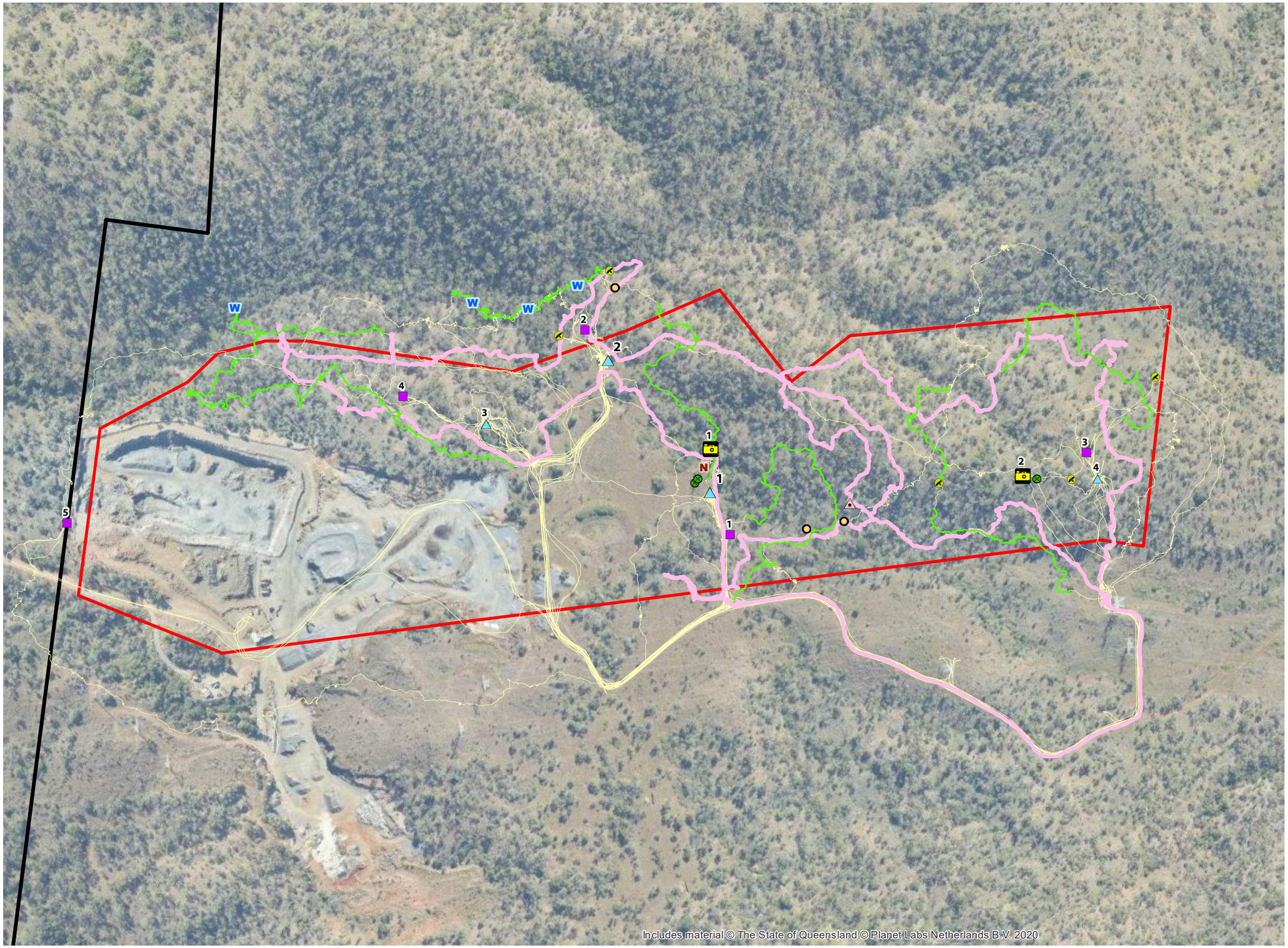
- Scientific Purposes Permit **WA0022007** granted under Section 12(f) of Nature Conservation (Administration) Regulation 2017
- Department of Agriculture and Fisheries (DAF) Ethics clearance **CA 2020/02/1387**
- Scientific User Registration **SUR000451**

Specific methodology employed is described in the following sections.

2.2.1 Standardised fauna assessment

The Queensland State Government sets certain standards for assessing the fauna of an area. The Terrestrial Vertebrate Fauna Survey Guidelines for Queensland (2018) (referred to hereafter as the Guidelines), outlines recommendations for standardised survey techniques and sets the minimum standards for adequately assessing habitat for fauna species. A full fauna assessment was conducted between17th – 23rd November 2020, employing standardised fauna survey site methodology in addition to several specialised survey techniques targeting specific fauna taxa and species. The following sections detail the fauna assessment methodology employed within the site. Fauna assessment locations can be seen in **Plan 1**.

1. Fauna Assessment



NOTES

This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources

Qld State Cadastre and Mapping layers © State of Queensland (Department of Natural Resources and Mines) 2020. Updated data available at http://qldspatial.information.qld.gov.au/catalogue//

Aerial Imagery © Nearmap, 2020

*This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

Legend

- Site DCDB
- Qld DCDB
- Impact Area
- Anabat Site
- Bird Survey Site
- Camera
- Dead Stag
- Fauna Observation Site
- Habitat Tree
- Nest
- Waterway
- Micro Bat Site
- Active Search
- Spotlighting
- Track Log

Issue	Date	Description	Drawn	Checked
A	11/12/2020	Preliminary	LS	LB

0 50 100 150 m

Transverse Mercator | GDA 1994 | Zone 56 | 1:3,750 @ A3

saunders havill group

AMCOR Quarries & Concrete Pty Ltd

Hume Road, Kabra

ADDRESS/RPD: 1RP616642

11/12/2020 | 10314 E 01 Fauna Assessment

2.2.2 Standardised fauna sites

Four fauna survey sites were installed in accordance with the Guidelines. All sites were installed within mapped Category B (remnant) vegetation (Least Concern RE11.11.15/11.11.3/11.11.5) (refer **Plan 1**). The sites were spatially separated to minimise repeated detection of mobile taxa such as macropods and birds.

Installation of a pitfall trap array in the centre of each 1 ha site involved excavating a shallow trench and installing fencing into the ground in a T-shape (**Figure 3**). Four 20L buckets were installed flush to the ground, with the fencing acting to direct fauna into the buckets. Three pairs of funnel traps were set against the fencing between buckets to capture additional fauna. Twenty Elliott box traps were placed in two parallel lines of ten along the length of the 1ha site.

Each fauna site remained active for a minimum of four nights (approximately 96 hours). During this time, ecologists monitored and reset all traps each morning between 0630 and 0900hrs and again between 1530 and 1715 hrs. All fauna was identified and released in situ as quickly as possible. Pitfall buckets and funnel traps remained open at all times whereas Elliott traps were closed from 0900hrs to 1530 hrs to avoid heat stress and injury to fauna.

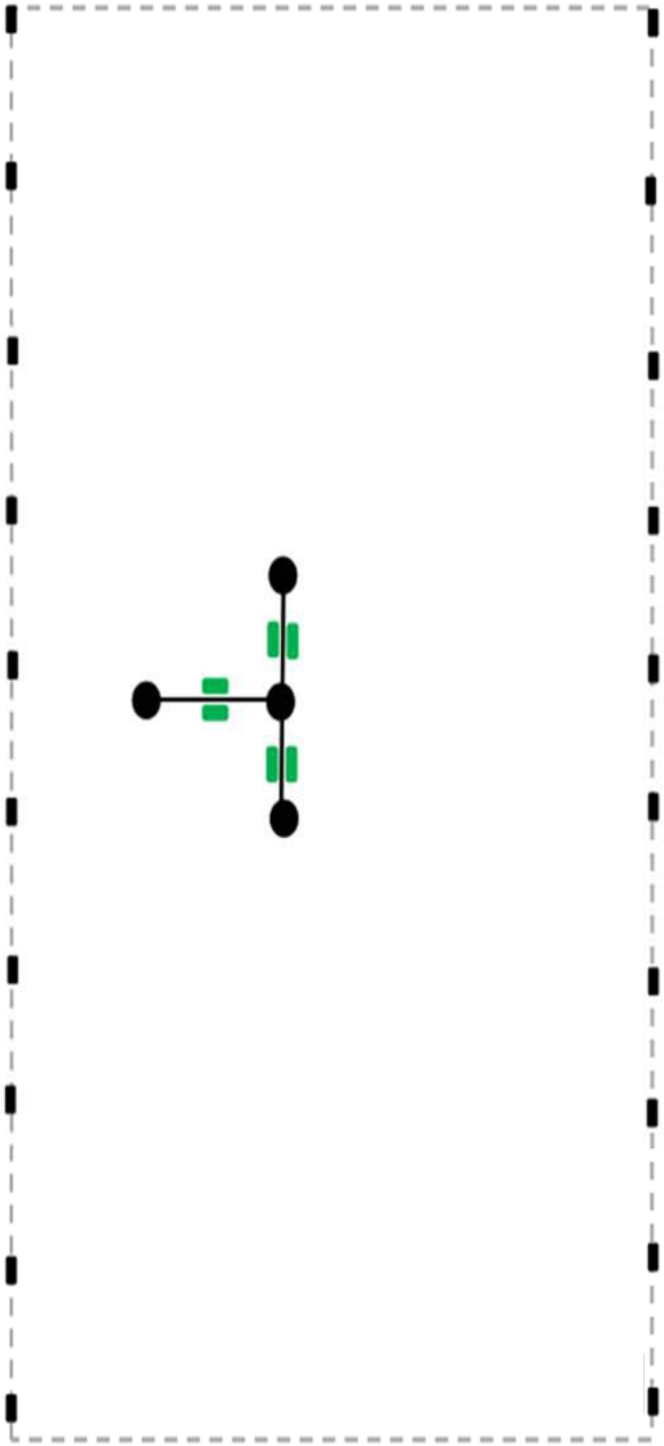


Figure 3: Standardised fauna survey site

represents an Elliott trap;
represents a pitfall bucket;
represents a funnel trap;
represents drift fencing

2.2.3 Alterations and limitations to standardised survey sites

Although adherence to standardised methodology was the objective, often modifications are required during installation due to issues with access, soil consistency and land use. Fauna site three and four were located within areas dominated by exposed granite, preventing successful installation of pitfall traps. However, drift fencing, funnels and Elliot traps were installed to maximise trapping efficacy.

2.2.4 Diurnal active and targeted searches

Active targeted searches were conducted during daylight hours. This involved thorough searching within potential microhabitat such as under tree bark, within loose leaf litter, under rocks and fallen timber, within partially decomposed tree stags and in tree foliage. Active searches were undertaken in multiple locations across the site at varying times of day/night. Prior to conducting spotlight surveys, significant hollows and notable features were noted and these directed spotlight meanders.

Active searches were conducted for 15-30 minutes by two ecologists between the 17th and 23rd November 2020. A total of 7 Active searches were completed for a total of 6.5-person hours over six days.

All species encountered were recorded.

2.2.5 Spotlight surveys

Spotlight searches were conducted over the course of two nights (19th November and 21st November 2020) from 1730 to 2030 by two ecologists. High-powered spotlights (Fenix HP25R Rechargeable LED Headlamp – 1000 lumens) were used to detect cryptic and nocturnal fauna. The site was not easily accessed via vehicle therefore meanders were conducted on foot. Waterways and large habitat trees were specifically targeted during the surveys.

The survey results are obtained from a total of 12-person hours of spotlight searches over two nights.

2.2.6 Anabat sites

A bat echolocator device (Anabat Swift) was installed at five locations across the site for a single night each, from 18th – 22nd November 2020. Locations within proximity to water are optimal, as microbats come in regularly to drink from water sources. Isolated water sources are the most likely to capture maximum bat calls due to the concentration of bats likely to utilise these. Water sources were generally absent from the site (the exception being the quarry pit) so Anabat locations were identified to provided coverage of the entire site.

2.2.7 Camera sites

Remote-triggered camera traps were installed in locations targeted at threatened species and cryptic fauna. Due to limited time allowance on-site, the cameras were installed for the duration of the survey only. Camera traps focused on a bait station containing peanut butter, oat mixture and dog food with cameras fixed to a tree approximately 70cm from the ground and 100-150cm in front of the bait station.

Camera images were downloaded and analysed with all species identified included in the site fauna list.

2.2.8 Observational survey for significant flora, habitat trees and biodiversity values

The assessment area was walked several times to gauge the potential for ideal habitat for threatened species identified as possible inhabitants of the site. Specific habitat attributes, which may support these threatened species, were also recorded when observed. This included observations of vertebrate fauna present within or

proximal to the study area, classified as species of conservation significance under the Commonwealth's EPBC Act (using JAMBA, CAMBA, ROKAMBA and the Bonn Convention) and Queensland's NC Act.

Observational assessment included identification of ecological features and values such as broad vegetation communities, fauna habitats, and areas ideal for maintaining wildlife connectivity across the region.

2.3. Waterway Assessment

A preliminary waterway survey was completed during field assessment of the mapped 'low' fisheries waterway. This waterway was mapped outside of the proposed impact area, adjacent to the northern boundary. The following information was recorded.

- general description;
- channel width
- in-stream habitat;
- vegetation quality and cover (embankments, channel and overall corridor);
- bed, bank and bar conditions (erosion, scouring, sediment); and
- weed cover.

3. Legislation, policy and planning instruments

3.1. *Environment Protection and Biodiversity Conservation Act 1999*

The Australian Government's key piece of environmental legislation is the EPBC Act. The EPBC Act aims to protect and manage matters of environmental significance, which include nationally and internationally important flora, fauna, ecological communities and heritage places.

A search using the Commonwealth's Protected Matters Search Tool (PMST) was conducted for the site. The search provides a list of wetlands of international significance, threatened ecological communities and threatened species, migratory and marine-listed species which have the potential to be temporarily or permanently located within a 5 km radius from the central point of the site. **Table 2** lists a summary of these results relevant to the site. The complete results of this search are included in **Appendix B**.

Table 2: EPBC Act PMST search results

Threatened Ecological Communities		
Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions (Community may occur within area)		
Poplar Box Grassy Woodland on Alluvial Plains (Community likely to occur within area)		
Weeping Myall Woodlands (Community likely to occur within area)		
Threatened Species		
Scientific name	**Common name**	**Status**
BIRDS		
Calidris ferruginea	Curlew Sandpiper	Critically Endangered
Erythrotriorchis radiatus	Red Goshawk	Vulnerable
Falco hypoleucos	Grey Falcon	Vulnerable
Geophaps scripta scripta	Squatter Pigeon (southern)	Vulnerable
Hirundapus caudacutus	White-throated Needletail	Vulnerable
Neochmia ruficauda ruficauda	Star Finch	Endangered
Numenius madagascariensis	Eastern Curlew	Critically Endangered
Poephila cincta cincta	Southern Black-throated Finch	Endangered
Rostratula australis	Australian Painted Snipe	Endangered
Turnix melanogaster	Black-breasted Button-quail	Vulnerable
MAMMALS		
Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable

Threatened Species		
Scientific name	**Common name**	**Status**
Dasyurus hallucatus	Northern Quoll	Endangered
Macroderma gigas	Ghost Bat	Vulnerable
Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable
Petauroides volans	Greater Glider	Vulnerable
Phascolarctos cinereus (combined populations of Qld, NSW and ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	Vulnerable
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable
PLANTS		
Bulbophyllum globuliforme	Miniature Moss-orchid	Vulnerable
Cadellia pentastylis	Ooline	Vulnerable
Cossinia australiana	Cossinia	Endangered
Cycas megacarpa	-	Endangered
Cycas ophiolitica	-	Endangered
Dichanthium setosum	Bluegrass	Vulnerable
Eucalyptus raveretiana	Black Ironbox	Vulnerable
Marsdenia brevifolia	-	Vulnerable
Samadera bidwillii	Quassia	Vulnerable
REPTILES		
Delma torquata	Collared Delma	Vulnerable
Denisonia maculata	Ornamental Snake	Vulnerable
Egernia rugosa	Yakka Skink	Vulnerable
Furina dunmalli	Dunmall's Snake	Vulnerable
Rheodytes leukops	Fitzroy River Turtle	Vulnerable
MIGRATORY TERRESTRIAL SPECIES		
Cuculus optatus	Oriental cuckoo	
Hirundapus caudacutus	White-throated Needletail	
Monarcha melanopsis	Black-faced monarch	
Monarcha trivirgatus	Spectacled monarch	
Myiagra cyanoleuca	Satin flycatcher	
Rhipidura rufifrons	Rufous fantail	

3.2. Nature Conservation Act 1992

The NC Act classifies and protects significant areas (Protected Areas) and protects threatened plant and animal species. The *Nature Conservation (Wildlife) Regulation 2006* (NCWR) lists plant and animal species presumed extinct, endangered, vulnerable, near threatened, least concern, international or prohibited. The schedules of this regulation were considered in this report using a wildlife online database search with a 5 km radius from the site. Species listed under the NCWR with the potential to occur around the subject site are shown in **Table 3**. Refer to **Appendix C** for full search results.

Table 3: NC Act wildlife online search results

Scientific name	Common name	Status
Mammals		
Petauroides volans volans	Southern Greater Glider	Vulnerable
Birds		
Calyptorhynchus lathami	Glossy black cockatoo	Vulnerable
Geophaps scripta scripta	Squatter Pigeon (southern)	Vulnerable
Ninox strenua	Powerful Owl	Vulnerable
Plants		
Graptophyllum excelsum	-	Near Threatened
Capparis humistrata	-	Endangered
Cycas megacarpa	-	Endangered

The protected plants regulatory framework under the NC Act commenced on 31 March 2014, establishing approval triggers and processes for clearing protected plants. A protected plant is defined as extinct, endangered, vulnerable and/or near threatened (EVNT) plant species listed by name in Schedules 1-5 of the NCWR and least concern wildlife, not listed by name but identified as a plant indigenous to Australia in Schedule 6.

Under the amended NC Act, a protected plant that is in the wild must not be 'taken', which includes being cleared, unless taking is under:

- A conservation plan applicable to the plant;
- A license, permit or other authority under a regulation; or
- An exemption under a regulation.

A search of the protected plants flora survey trigger map identified that the works area is mostly located within a 'high risk' area for protected plants (refer **Figure 4**).

Under the NC Act, a native plant is considered to be a protected plant if it is 'in the wild' – defined in the NC Act as 'in an independent state of natural liberty'. No specimens listed under the NC Act were identified within the application area or 100m buffer.

3.3. *Vegetation Management Act 1999*

The VM Act is the key mechanism by which the Queensland Government protects the state's environmental resources pertaining to vegetation. Under the VM Act, a series of maps delineate vegetation features across the landscape, which are each assigned a conservation value directly related to the remaining extent of these features in the landscape. The VM Act also protects 'essential habitat' vegetation where listed threatened species have been known to occur.

Regulated vegetation management mapping (shows vegetation categories used to determine clearing requirements. While areas shown on the map as category X are not regulated under the VM Act, those shown as category A, B, C or R are subject to clearing requirements. The latter vegetation categories can only be cleared in accordance with an exemption, self-assessable vegetation clearing code, area management plan or development approval. A supporting map defining regional ecosystems, wetlands, watercourses and essential habitat, is provided with the regulated vegetation management map. Approval for clearing of native vegetation is required under the *Planning Act 2016*, specifically, assessment is required against State Code 16: Native Vegetation Clearing of the State Development Assessment Provisions (SDAP) which are administered by the State Assessment and Referral Agency (SARA) which is a division of the Department of Infrastructure, Local Government and Planning (DILGP).

A property search of the Regulated Vegetation Management Map identified the proposed impact area as being mostly mapped as remnant vegetation (Category B) (**Figure 5**) listed as 'Least Concern' RE11.11.15/11.11.3/11.11.5. It should be noted that the current quarry foot print and associated cleared areas are mapped as remnant vegetation on the Regulated Vegetation Management Map.

Remnant vegetation of Least Concern status have additional conditions applied to them under the VM Act, being mapped as essential habitat and wildlife habitat (endangered or vulnerable) (**Figure 6**) (VM Act). Essential habitat for *Cycas megacarpa* is listed under the VM Act and mapped on-site.

A small portion of the site is mapped as Category X (non-remnant) vegetation (refer **Figure 5**). Clearing of non-remnant vegetation is exempt from clearing regulations under the VM Act.



Legend

- Site DCDB
- Qld DCDB
- High risk area - flora survey trigger
- Impact Area

Figure 3

NCA - Protected Plants
Flora Survey Trigger

AMCOR
Quarries

File ref. 10314 E Figure 3 Protected Plants Trigger A
Date *11/12/2020*
Project ~~*Hume Road,*~~ *Kabra*

0 50 100 200 300 400 500 *m*

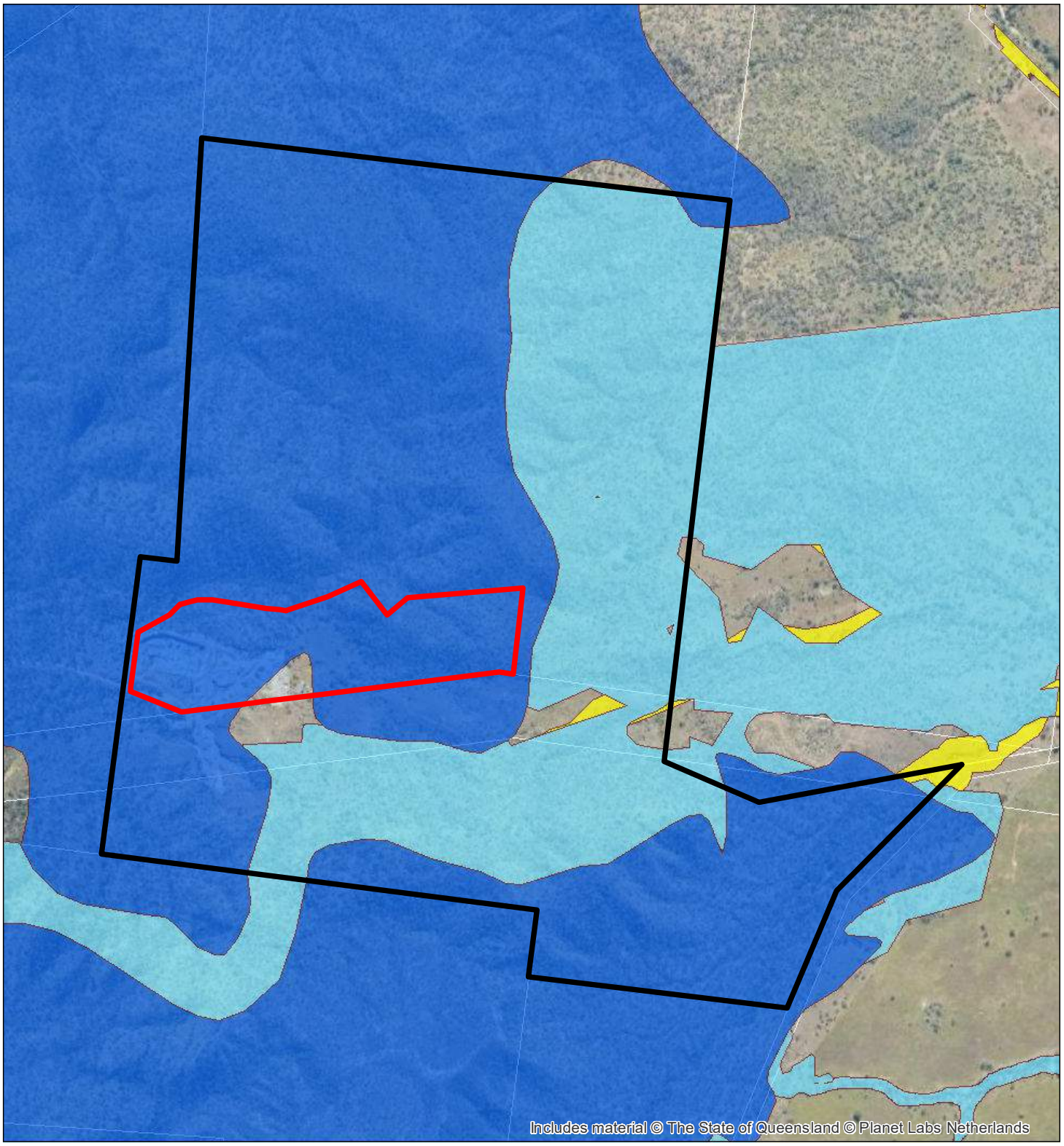
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Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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Layer Source: © State of Queensland (Department of Natural Resources, Mines and Energy; Department of Environment and Science) 2020



Legend

- Site DCDB
- Qld DCDB
- Impact Area
- Category B area - *Remnant vegetation*
- Category C area - *High value regrowth vegetation*
- Category R area - *Reef regrowth watercourse vegetation*
- Category X area - *Vegetation not regulated under the VMA*

Figure 4

Regulated Vegetation Management Map

File ref. 10314 E Figure 4 RVMM A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

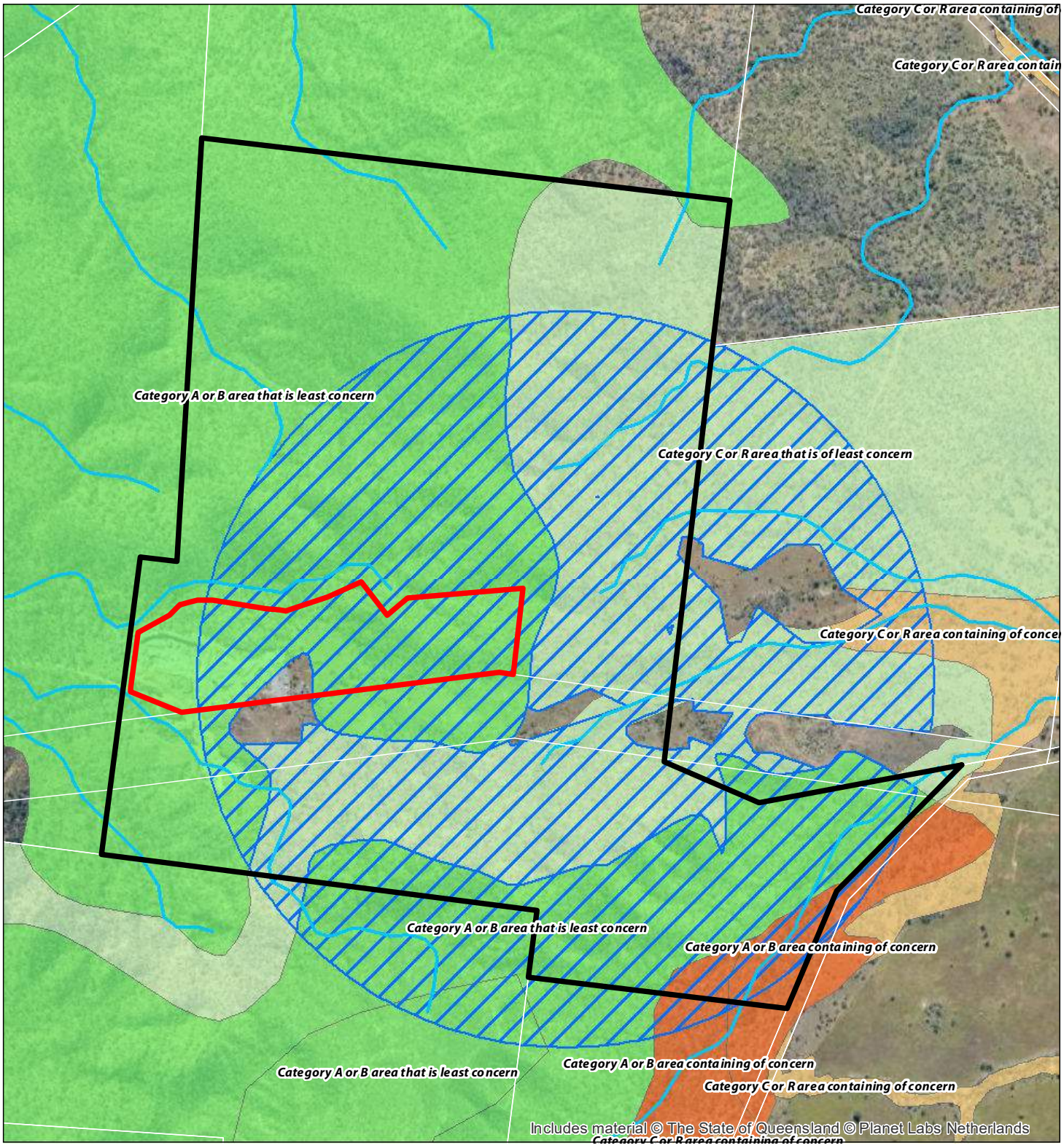
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AMCOR Quarries

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Legend

- Site DCDB
- Qld DCDB
- Impact Area
- VM Watercourses
- VM Essential Habitat

Regional Ecosystems mapping

- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C area containing endangered regional ecosystems
- Category C area containing of concern regional ecosystems
- Category C area that is a least concern regional ecosystem

Figure 5

Regulated Vegetation Supporting Map

AMCOR Quarries

File ref. 10314 E Figure 5 RVSM A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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3.4. *Environmental Protection Act 1994*

The key piece of environmental legislation in Queensland is the *Environmental Protection Act 1994* (EPA). The EPA protects the environment with a focus on ecologically sustainable development. It creates a general duty for all people, companies and government bodies to take all reasonable and practicable steps to avoid harm to the environment. Under the EPA, it is an offence to cause harm to the environment, and to not notify authorities if you are doing an activity and become aware that it is causing environmental harm.

3.5. Environmental Protection Regulation 2019

The Environmental Protection Regulation 2019 details the processes outlined within the EPA. The EPR provides applicable details associated with fees and procedures in addition to listing the prescribed ERA's regulated under the Act.

3.6. *Biosecurity Act 2014*

The *Biosecurity Act 2014*, which commenced on 1 July 2016, establishes a framework to regulate and control invasive plants and animals. Under the *Biosecurity Act 2014*, land owners are responsible for taking all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This is known as the general biosecurity obligation (GBO).

The *Biosecurity Act 2014* categorises restricted matter (restricted plants and animals) into the following:

- Category 1: must be reported to an inspector within 24 hours (includes Red Imported Fire Ants, amongst others).
- Category 2: must be reported within 24 hours Biosecurity Queensland on 13 25 23.
- Category 3: must not be distributed either by sale or gift, or released into the environment.
- Category 4: must not be moved.
- Category 5: must not be kept.
- Category 6: must not be fed (animals).
- Category 7: must be euthanised (animals).

Restricted matters observed in the site area are discussed in **Section 4**.

3.7. *Fisheries Act 1994 and Water Act 2000*

The *Fisheries Act 1994* deals with the use, conservation and improvement of Queensland's fisheries resources and fish habitats. The legislation deals with the impact from coastal development on marine fish habitat, including protected marine plants, and declared fish habitat areas. Development proposals that modify, or have a temporary or permanent loss of fish habitat are assessed by the Department of Agriculture and Fisheries (DAF).

No fish habitat areas are mapped on-site. However, a 'low' risk waterway for waterway barrier works (WWBW) is mapped adjacent to the northern boundary outside of the proposed impact area. Being a Fisheries-mapped waterway, should any operational work be undertaken within the mapped waterway that does not meet

Accepted Development Requirements, a response to State Development Assessment Provisions (SDAP) State Code 18: Waterway Barrier Works will be required.

As no marine plants were identified during ecological field survey, a response to State Code 11: Marine Plants is not required. The *Water Act 2000* provides a framework for the sustainable management of Queensland's water resources and quarry material. Under the Act, a riverine protection permit is required to be obtained if works within a waterway result in filling or excavation unless these works meet an exemption.

3.8. Koala Legislation - Planning Regulation 2017 – Schedule 11

On February 7th 2020, the Queensland Government introduced new legislation regulating the approach to impacting on koala habitat. This legislation increased restrictions on habitat within a large portion of Queensland. The investigation area does not sit within a Koala Priority Area (KPA) and no koala habitat is mapped on-site. As such, no assessable development provisions are applicable (i.e. *SDAP Code 25*)

3.9. Other Queensland environmental legislation

Other Queensland environmental legislation has been reviewed in the context of the proposed development. **Table 4** lists other relevant Queensland legislation that is not triggered by the proposed development, the purpose of the legislation, and its relevance to the proposed development site.

Table 4: Site relevant to other Queensland environmental legislation

Legislation	Purpose	Relevance to development site
Coastal Protection and Management Act 1995	Seeks to protect the coastal resources of the coastal zone through regulation of assessable coastal development	The site is not mapped within a coastal zone. Therefore, a response to State Code 8 is not required. The site is located outside the Coastal Management District regulated under the Act.
Planning Regulation 2017 – Schedule 11	Regulates development within mapped Koala Habitat Areas by regulating the clearing of mapped Koala habitat and stipulating how it must be cleared. Schedule 10 Part 10 Division 1 of the Regulation outlines what is and is not prohibited development in a Koala habitat area. Schedule 11 of the Regulation sets the benchmarks for assessment in Koala Assessable Development Areas.	The site is mapped as being entirely outside a Koala Priority Area. No koala habitat is mapped on the site.
State Planning Policy 2017 (SPP)	Provides interim development assessment requirements which ensures that state interests are considered by local government when assessing development applications where the local government planning scheme does not yet integrate the State interests in the SPP. MSES include Biodiversity, Coastal Environment, and Water Quality.	The site is mapped as containing MSES – Wildlife Habitat (endangered or vulnerable) and Regulated vegetation (essential habitat). MSES mapping overlays and requirements of the SPP are required to be incorporated into the RRC Planning Scheme and are reflected in the planning scheme overlays. Compliance with the SPP is addressed

Legislation	Purpose	Relevance to development site
		through the provisions of the planning scheme.

3.10. Town planning instruments

The site is located within the jurisdiction of Rockhampton Regional Council (RRC) and is subject to the provisions of the RRC Planning Scheme.

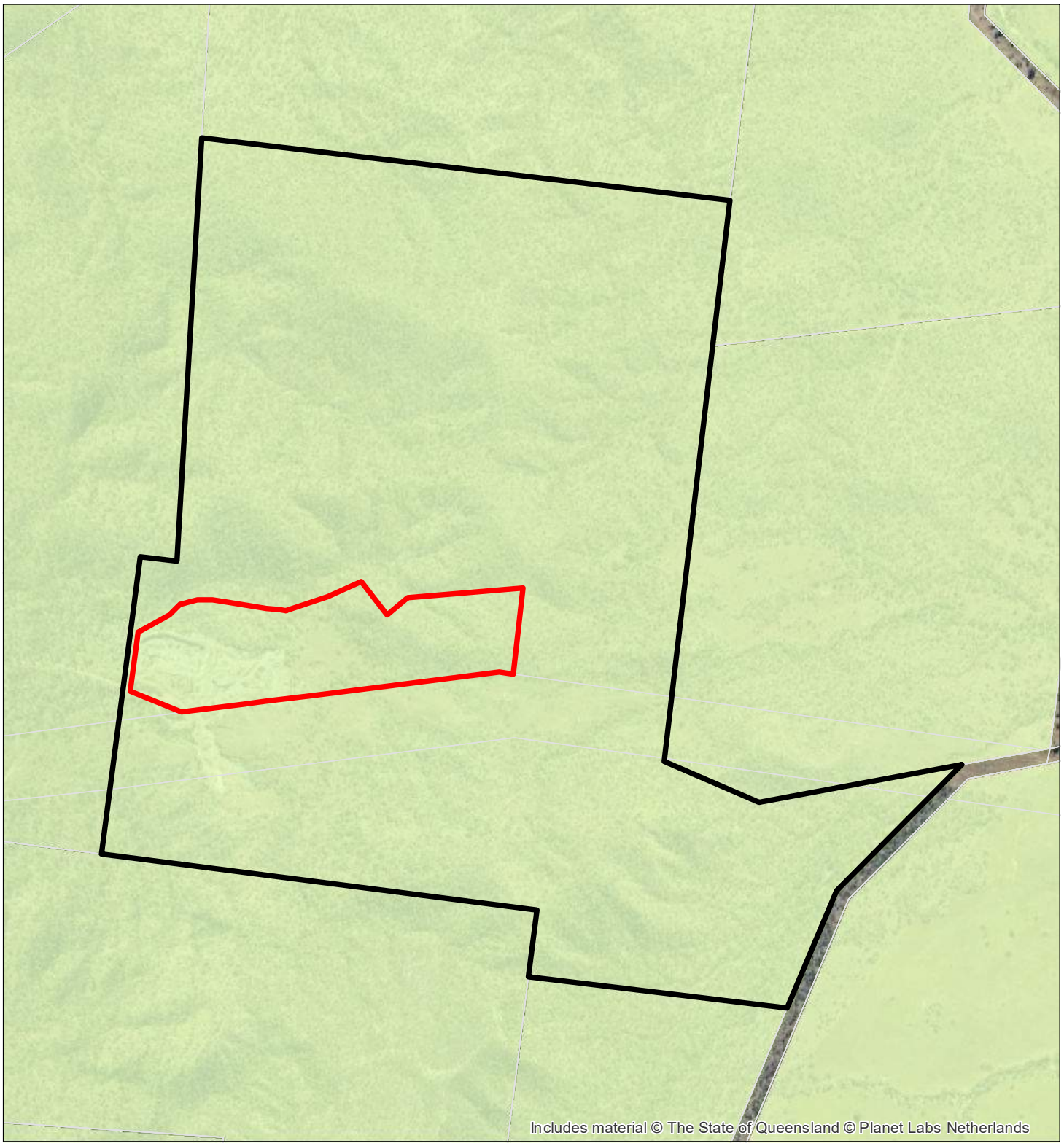
3.10.1 Rockhampton Regional Council Planning Scheme

The proposed works area is zoned as rural with adjoining properties also zoned rural (refer **Figure 7**).

Under the RRC planning scheme, the proposed works area is mapped with the following ecologically relevant overlays:

- Biodiversity areas (MSES and MLES General) (refer **Figure 8**)
- Waterways (**Figure 8**).

A detailed response to the Biodiversity Areas Overlay Code and Waterway Corridors Overlay Code will be submitted in association with this report.



Legend

- Site DCDB
- Imapct Area
- Qld DCDB
- Rural Land Use Zone

Figure 6

Rockhampton Regional Council Zoning

AMCOR
Quarries

File ref. 10314 E Figure 6 Rockhampton RC Zoning A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

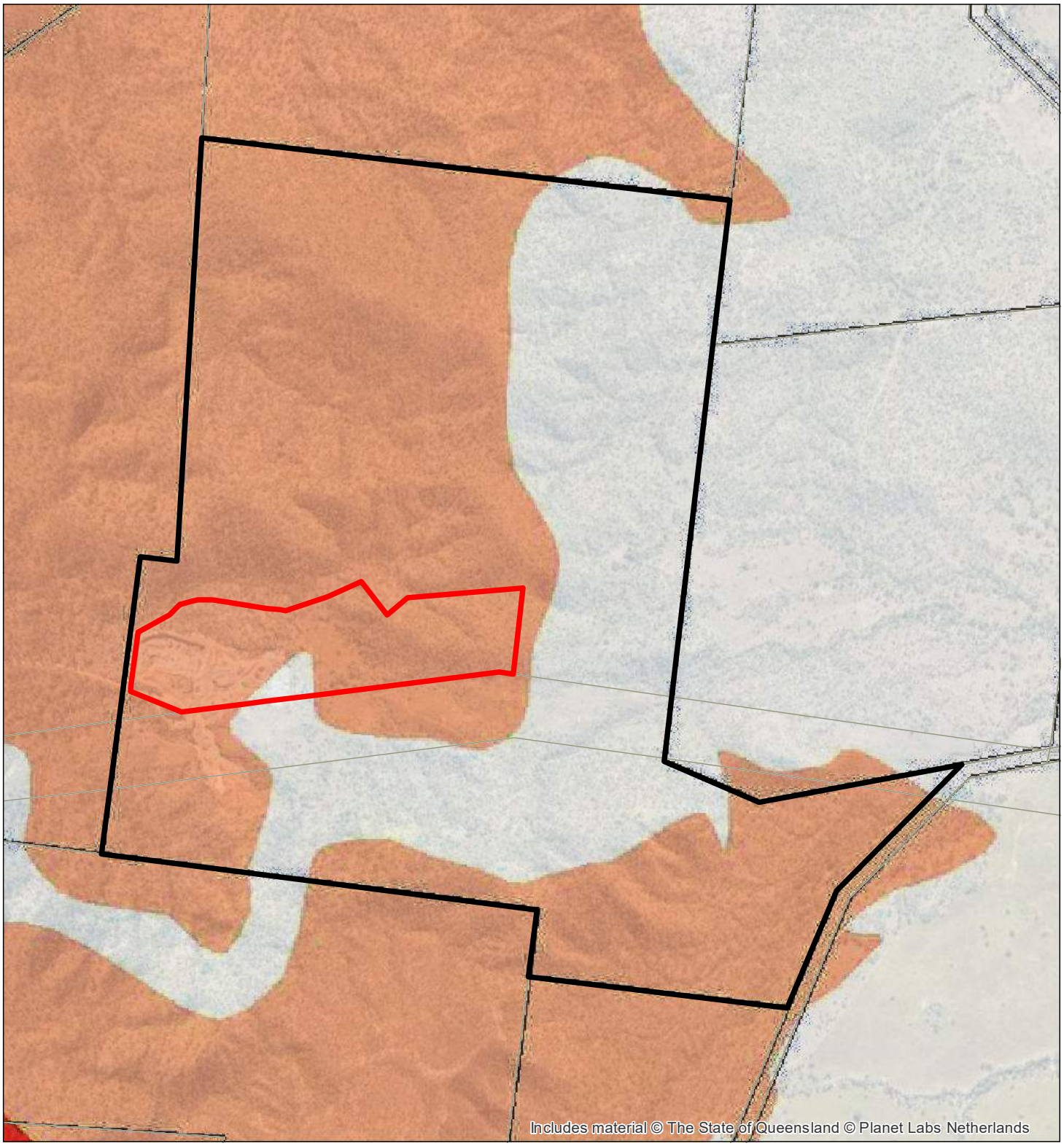
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Legend

- Site DCDB
- Imapct Area
- Qld DCDB
- MLES - General

Figure 7

Rockhampton Regional Council
Biodiveristy Areas

AMCOR
Quarries

File ref. 10314 E Figure 7 Rockhampton RC Biodiversity A - Copy
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

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Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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4. Ecological survey results

Ecologists from Saunders Havill Group (SHG) assessed the impact site on 17th – 23rd November 2020, with weather conditions detailed in **Table 5.** The entire site was walked to ensure all vegetation communities and species were recorded. Particular attention was paid to any threatened flora and habitat for any threatened fauna species that were listed as potentially occurring within the vicinity of the application area, and habitat attributes which may support these threatened species.

Table 5: Weather Conditions

Date	Weather Conditions	High (°C)	Low(°C)	Rain (mm)
17th November 2020	Sunny and clear	35.5	20.7	0
18th November 2020	Sunny and clear	32.3	21.2	0
19th November 2020	Sunny and clear	30.2	23.1	0
20th November 2020	Intermittent rain and cloud cover	31.3	20.8	1.2
21st November 2020	Sunny and clear	33.4	21.6	0.4
22nd November 2020	Sunny and clear	31.4	21.2	0
23rd November 2020	Sunny and clear	33.4	20.5	0

Data obtained from Bureau of Meteorology (BOM) weather station (039083)

4.1. General site survey details

The following observations have been made based on detailed field survey.

- The investigation area incorporates approximately 25.6 ha of land to the south of the Capricorn Highway near Stanwell, Qld.
- The investigation area is mapped as containing mostly Category B remnant vegetation and Category X non-remnant vegetation. Remnant vegetation on-site is mapped as a Least Concern composite RE of RE11.11.15/11.11.3/11.11.5. It should be noted that the mapped remnant vegetation includes the current quarry footprint and adjacent cleared areas.
- A number of habitat trees exist throughout the site which were noted during this survey assessment.

4.2. Flora survey results

Flora was assessed during site visits between 17th – 23rd November, 2020.

- A total of 99 species of flora were detected on-site during surveys (**Table 6**).
- The investigation area typically reflects its current rural land uses. A power easement is situated to the south of site consisting of mostly cleared vegetation with native and exotic species at the ground layer

and scattered canopy species recruiting. Cattle were observed grazing over much of the accessible site, resulting in tracks and patches of open grazed areas. A number of drainage lines were observed across the site which showed variations in vegetation community and often heavily weed infested with *Lanatana camara* (Lantana) and *Cryptostegia grandiflora* (Rubber Vine).

- The majority of the site is mapped as Category B (remnant) 'Least Concern' vegetation. It should be noted that the remnant vegetation mapping layer encompasses the current quarry footprint and adjacent cleared areas. Remnant vegetation is mapped as 'Least Concern' composite RE11.11.15/11.11.3/11.11.5. Vegetation on-site is dominated by *Eucalyptus crebra* (Narrow-leaved Ironbark) with *Corymbia tessellaris* (Moreton Bay Ash), *Eucalyptus melanophloia* (Silverleaf Ironbark) and *Corymbia erythrophloia* (Variable-barked Bloodwood). The species identified are indicative of the current mapped RE11.11.15.
- A mapped waterway is present adjacent to the northern boundary of the study area. The majority of the area is heavily weed infested with *Lanatana camara* (Lantana) and *Cryptostegia grandiflora* (Rubber Vine). Riparian vegetation is present along the banks of the mapped waterway consisting of *Melaleuca leucadendra* (Weeping Paperbark) and *Melaleuca bracteata* (Black Tea-tree).

Table 6: Flora species detected on within the study area.

Species	**Common Name**
Abrus precatorius	Gidee Gidee
Acacia disparrima	Hickory Wattle
Acacia salicina	Sally Wattle
Aeschynomene indica	Budda Pea
Alphitonia excelsa	Soap Tree
Alstonia constricta	Bitter Bark
Alyxia magnifolia	Large-leaved Chain Fruit
Alyxia ruscifolia	Chain Fruit
Andropogon virgincus	Whisky Grass
Argemone ochroleuca	Prickly Poppy
Aristida latifolia	Feathertop Wiregrass
Atalaya hemiglauca	Whitewood
Bidens pilosa	Cobble's Pegs
Bothriochloa bladhii	Forest Bluegrass
Brachychiton acerifolius	Flame Tree
Brachychiton australis	Broad Leaved Bottle Tree
Brachychiton rupestris	Bottle Tree
Breynia oblongifolia	Coffee Bush
Calyptocarpus vialis	Creeping Cinderella Weed
Canthium attenuatum	Myrtle
Capparis canescens	Wild Orange
Carrisa ovata	Current Bush
Cassytha pubescens	Devils Twine
Cenchrus ciliaris	Buffel Grass
Chloris inflata	Purpletop Chloris
Chloris virgata	Feathertop Rhodes Grass
Corymbia erythrophloia	Variable Barked Bloodwood
Corymbia tessellaris	Moreton Bay Ash

Species	**Common Name**
Crinum flaccidum	Murray Lily
Cryptostegia grandiflora	Rubber Vine
Cupaniopsis anacardoides	Tuckeroo
Cymbidium canaliculatum	Channelled Boat-lip Orchid
Cynondon dactylon	Green Couch
Cyperus polystachyos	Bunchy Sedge
Dactyloctenium radulans	Button Grass
Datura stramonium	Thornapple
Desmodium intortum	Greenleaf Desmodium
Dianella caerulea	Blueberry Lily
Dichanthium sericeum	Queensland Bluegrass
Dodonaea viscosa subsp. Angustissima	Narrow Leaf Hop Bush
Eragrostis brownii	Brown's Love Grass
Eremophila bignoniiflora	Dogwood
Eremophila deblis	Winter Apple
Eremophila maculata	Fuchsia Bush
Eriocereus martinii	Harrisia Cactus
Erythrina vespertilio	Bat Wing Coral Tree
Eucalyptus crebra	Narrow Leaf Ironbark
Eucalyptus melanophloia	Silver-leaved Ironbark
Eucalyptus tereticornis	Forest Red Gum
Eustrephus latifolius	Wombat Berry
Ficus coronata	Sand Paper Fig
Ficus rubiginosa	Port Jackson Fig
Ficus virens	White Fig
Gomphocarpus physocarpus	Balloon Cotton Bush
Gomphrena celosioides	Gomphrena Weed
Grewia latifolia	Dogs Balls
Heliotropium amplexicaule	Blue Heliotrope
Heteropogon contortus	Black Speargrass
Hibiscus heterophyllus	Native Hibiscus
Lantana camara	Lantana
Lantana montevidensis	Creeping Lantana
Leucaena leucocephala	Leucaena
Lomandra longifolia	Mat Rush
Lysiphyllum hookeri	White Flowered Bauhinia
Macroptilium atropurpureum	Siratro
Mallotus philippensis	Red Kamala
Medicago polymorpha	Burr Medic
Megathyrsus maximus	Guinea Grass
Melaleuca bracteata	Black Tea Tree
Melaleuca leucadendra	Weeping Paperbark
Melaleuca viminalis	Weeping Bottlebrush
Melinis repens	Red Natal Grass
Neonotonia wightii	Glycine
Neptunia gracilis	Native Sensitive Weed
Opuntia tomentosa	Prickly Pear

Species	Common Name
Ozothamnus diomifolius	Sago Flower
Panicum decompositum	Native Millet
Parthenium hysterophorus	Parthenium Weed
Passiflora suberosa	Corky Passion Vine
Pathenium hysterophorus	Parthenium Weed
Pennisetum setaceum	African Fountain Grass
Petalostigma pubescens	Quinine Bush
Salanum ellipticum	Potato Bush
Santalum lanceolatum	Sandlewood
Senna occidentalis	Coffee Senna
Senna pendula	Easter Cassia
Setaria sphacelata	South African Pigeon Grass
Sida acuta	Small Flannel Weed
Solanum ellipticum	Potato Bush
Solanum seaforthianum	Brazilian Nightshade
Sporobolus caroli	Fairy Grass
Stachytarpheta jamaicensis	Light Blue Snake Weed
Themeda triandra	Kangaroo Grass
Trema tomentosa	Poison Peach
Trophis scandens	Burney Vine
Urochloa decumbens	Signal Grass
Vigna lanceolata	Maloga Bean
Whalenbergia gracilis	Small-flowered Bluebell
Xanthorrhoea johnsonii	Grass Tree

4.2.1 Introduced species

A total of 31 flora species detected on-site are introduced to Australia or the local region. Five (5) of these species are classified as Restricted Invasive under the Biosecurity Act 2014 and will require some form of targeted management on-site.

Species	*Common Name*	*Introduced*	*Restricted under Biosecurity 2014*
Abrus precatorius	Gidee Gidee	X	
Acacia disparrima	Hickory Wattle		
Acacia salicina	Sally Wattle		
Aeschynomene indica	Budda Pea		
Alphitonia excelsa	Soap Tree		
Alstonia constricta	Bitter Bark		
Alyxia magnifolia	Large-leaved Chain Fruit		
Alyxia ruscifolia	Chain Fruit		
Andropogon virgincus	Whisky Grass	X	
Argemone ochroleuca	Prickly Poppy	X	
Aristida latifolia	Feathertop Wiregrass		
Atalaya hemiglauca	Whitewood		

Species	*Common Name*	*Introduced*	*Restricted under Biosecurity 2014*
Bidens pilosa	Cobbler's Pegs	X	
Bothriochloa bladhii	Forest Bluegrass		
Brachychiton acerifolius	Flame Tree		
Brachychiton australis	Broad Leaved Bottle Tree		
Brachychiton rupestris	Bottle Tree		
Breynia oblongifolia	Coffee Bush		
Calyptocarpus vialis	Creeping Cinderella Weed	X	
Canthium attenuatum	Myrtle		
Capparis canescens	Wild Orange		
Carrisa ovata	Current Bush		
Cassytha pubescens	Devils Twine		
Cenchrus ciliaris	Buffel Grass	X	
Chloris inflata	Purpletop Chloris	X	
Chloris virgata	Feathertop Rhodes Grass	X	
Corymbia erythrophloia	Variable Barked Bloodwood		
Corymbia tessellaris	Moreton Bay Ash		
Crinum flaccidum	Murray Lily		
Cryptostegia grandiflora	Rubber Vine	X	X
Cupaniopsis anacardoides	Tuckeroo		
Cymbidium canaliculatum	Channelled Boat-lip Orchid		
Cynondon dactylon	Green Couch		
Cyperus polystachyos	Bunchy Sedge	X	
Dactyloctenium radulans	Button Grass		
Datura stramonium	Thornapple	X	
Desmodium intortum	Greenleaf Desmodium	X	
Dianella caerulea	Blueberry Lily		
Dichanthium sericeum	Queensland Bluegrass		
Dodonaea viscosa subsp. Angustissima	Narrow Leaf Hop Bush		
Eragrostis brownii	Brown's Love Grass		
Eremophila bignoniiflora	Dogwood		
Eremophila debilis	Winter Apple		
Eremophila maculata	Fuchsia Bush		
Eriocereus martinii	Harrisia Cactus	X	X
Erythrina vespertilio	Bat Wing Coral Tree		
Eucalyptus crebra	Narrow Leaf Ironbark		
Eucalyptus melanophloia	Silver-leaved Ironbark		
Eucalyptus tereticornis	Forest Red Gum		
Eustrephus latifolius	Wombat Berry		
Ficus coronata	Sand Paper Fig		
Ficus rubiginosa	Port Jackson Fig		

Species	***Common Name***	***Introduced***	***Restricted under Biosecurity 2014***
Ficus virens	White Fig		
Gomphocarpus physocarpus	Balloon Cotton Bush	X	
Gomphrena celosioides	Gomphrena Weed	X	
Grewia latifolia	Dogs Balls		
Heliotropium amplexicaule	Blue Heliotrope	X	
Heteropogon contortus	Black Speargrass		
Hibisucs heterophyllus	Native Hibiscus		
Lantana camara	Lantana	X	X
Lantana montevidensis	Creeping Lantana	X	X
Leucaena leucocephala	Leucaena	X	
Lomandra longifolia	Mat Rush		
Lysiphyllum hookeri	White Flowered Bauhinia		
Macroptilium atropurpureum	Siratro	X	
Mallotus philippensis	Red Kamala		
Medicago polymorpha	Burr Medic	X	
Megathyrsus maximus	Guinea Grass	X	X
Melaleuca bracteata	Black Tea Tree		
Melaleuca leucadendra	Weeping Paperbark		
Melaleuca viminalis	Weeping Bottlebrush		
Melinis repens	Red Natal Grass	X	
Neonotonia wightii	Glycine	X	
Neptunia gracilis	Native Sensitive Weed		
Opuntia tomentosa	Prickly Pear	X	
Ozothamnus diomifolius	Sago Flower		
Panicum decompositum	Native Millet		
Parthenium hysterophorus	Parthenium Weed		
Passiflora suberosa	Corky Passion Vine	X	
Pathenium hysterophorus	Parthenium Weed	X	
Pennisetum setaceum	African Fountain Grass	X	
Petalostigma pubescens	Quinine Bush		
Salanum ellipticum	Potato Bush		
Santalum lanceolatum	Sandlewood		
Senna occidentalis	Coffee Senna		
Senna pendula	Easter Cassia	X	
Setaria sphacelata	South African Pigeon Grass		
Sida acuta	Small Flannel Weed	X	
Solanum ellipticum	Potato Bush		
Solanum seaforthianum	Brazilian Nightshade	X	
Sporobolus caroli	Fairy Grass		
Stachytarpheta jamaicensis	Light Blue Snake Weed	X	

Species	*Common Name*	*Introduced*	*Restricted under Biosecurity 2014*
Themeda triandra	Kangaroo Grass		
Trema tomentosa	Poison Peach		
Trophis scandens	Burney Vine		
Urochloa decumbens	Signal Grass	X	
Vigna lanceolata	Maloga Bean		
Whalenbergia gracilis	Small-flowered Bluebell		
Xanthorrhoea johnsonii	Grass Tree		

4.3. Fauna survey results

A full fauna survey was completed from 17th – 23rd November 2020. The fauna assessment aligns with the recommendations set out in the Terrestrial Vertebrate Fauna Survey Guidelines for Queensland.

Site accessibility was obtained through Stanwell Quarry off Power Station Road in the southern extent of Lot 1 on RP616642. A full fauna assessment was conducted across the site to identify and describe on-ground habitat features (e.g. significant trees and hollows, fallen timber, stags, termite mounds, roosting sites etc.), signs of fauna activity (e.g. scats, tracks, scratch marks on trees, nests etc.) and observations of species present within the area.

A total of 38 vertebrate fauna species were definitively detected on-site during assessments. A total of twelve (12) species of mammal (including microbats and introduced species), 17 species of bird, 6 species of reptile and 3 species of amphibian were detected during the course of the surveys. An additional three species of microbat were considered potentially detected onsite due to unresolved calls.

Consideration was also given to the ecological significance of the site in the context of the local area and the broader region. Targeted surveys for reptiles, frogs and nocturnal species were conducted and fauna trap sites were installed, utilising the equipment detailed in **Section 2.2**.

Access was available to the whole site however few vehicle tracks were present so the majority of the site was traversed by foot.

4.4. Fauna Assessment sites

Six types of fauna survey sites were used to assess the presence and potential presence of fauna species across the investigation area. Each type of site is suited to trapping or detecting specific fauna taxa (refer to **Section 2.2** for details).

A full list of all species detected on site is presented in **Appendix A**.

4.4.1 Full fauna sites

Two full fauna survey sites and two modified fauna sites were installed over two days in accordance with the Guidelines. All sites were located within mapped remnant vegetation consisting of a composite RE of RE11.11.15/11.11.3/11.11.5 (refer **Figure 4**). The sites were spatially separated to avoid repeat detection of mobile taxa such as macropods and birds.

Fauna site 1

Fauna site one was installed in the morning of 18th November 2020 and located east of the current quarry footprint within mapped Category B – remnant vegetation. This site remained open from 18th November to 23rd November 2020.

The site consisted of patches of open grassland with large trees scattered throughout, primarily *Eucalyptus crebra* (Narrow-leaved Ironbark). Exotic *Lantana camara* (Lantana) and *Cryptostegia grandiflora* (Rubber Vine) dominated the shrub layer (refer **Photo set 1**). Directly west of the site has been recently cleared and levelled for future quarry works. A number of large hollow bearing trees were noted in the vicinity of this fauna site. The site was located on relatively flat terrain which gradually slopes uphill approximately 50m east of the fauna site. A small drainage feature was present north of the fauna site location which consisted of a dry depression and scattered *Melaleuca leucadendra* (weeping Paperbark).

Exotic Cane Toads (*Rhinella marina*) and House Mouse (*Mus musculus*) were frequently recorded in this location as well as native Ornate Burrowing Frog (*Platyplectrum ornatum*). No significant fauna species listed under the NCA or EPBC act were recorded in this area. Refer to **Appendix A** for full fauna list.



Photo set 1: Fauna site 1

Fauna site 2

Fauna site two was installed in the morning of 18th November 2020 and located north-east of the current quarry footprint within mapped Category B – remnant vegetation. This site remained open from 18th November to 23rd November 2020.

The site was located within a section of open canopy dominated by grasses with scattered *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia erythrophloia* (Variable-barked Bloodwood). Adjacent to the fauna site consisted of a greater density of canopy species and *Lantana camara* (Lantana). A mapped waterway is present approximately 80m north of fauna site 2, outside the proposed impact area. Directly south-west of the site has been recently cleared and levelled for future quarry works.

Although no species of conservation significance were detected within the site, multiple reptile species were recorded over the survey period including the Tussock Rainbow-skink (*Carlia vivax*), Elegant Snake-eyed Skink (*Cryptoblepharus pulcher*) and Bandy-bandy (*Vermicella annulata*). These species are typical of the vegetation type present within fauna site 2. Refer to **Appendix A** for full fauna list.



Photo set 2: Fauna site 2

Fauna site 3

Fauna site two was installed in the morning of 19th November 2020 and located north of the current quarry footprint within mapped Category B – remnant vegetation. This site remained open from 19th November to 23rd November 2020.

The site was installed within *Corymbia erythrophloia* (Variable-barked Bloodwood) dominated vegetation. No obvious sub-canopy was present and the shrub layer was made up of regenerating canopy species and scattered *Xanthorrhoea johnsonii* (Grass Tree). The ground layer consisted of native and exotic grasses throughout with substantial leaf litter.

As previously stated, fauna site 3 consisted of a granite substrate throughout the site resulting in the unsuccessful instalment of pitfall traps. Drift fencing, funnel and Elliot traps were successfully installed.

The house mouse (*Mus musculus*) was frequently recorded at this location along with the Eastern Stone Gecko (*Diplodactylus vittatus*) and Tussock Rainbow-skink (*Carlia vivax*).

No significant fauna species were detected within the site. Refer to **Appendix A** for full fauna list.



Photo set 3: Fauna site 3

Fauna site 4

Fauna site four was installed in the morning of 19th November 2020 and located north of the current quarry footprint within mapped Category B – remnant vegetation. This site remained open from 19th November to 23rd November 2020.

Fauna site 4 is located within mapped remnant vegetation in the far eastern extent of the proposed impact area. This site consisted of moderate canopy cover dominated by *Eucalyptus crebra* (Narrow-leaved Ironbark) with *Eucalyptus melanophloia* (Silverleaf Ironbark) and *Erythrina vespertilio* (Batwing Coral Tree). The shrub layer consisted of regenerating canopy species while the ground layer contained a mix of native and exotic grasses. A number of fallen logs and exposed rocks were present providing structural habitat for small terrestrial vertebrates.

As previously stated, fauna site 4 consisted of a granite substrate just below the surface resulting in the unsuccessful instalment of pitfall traps. Drift fencing, funnel and Elliot traps were successfully installed.

The most prevalent species at this site were Cane Toads (*Rhinella marina*) and the House Mouse (*Mus musculus*). No fauna species of conservation significance were detected within the site. Refer to **Appendix A** for full fauna list.



Photo set 4: Fauna site 4

4.4.2 Active/targeted search sites

A total of 7 active searches were carried over the course of the survey period in November 2020. **Table 7** summarises the details of each site surveyed. Refer to **Plan 3** for Active search locations.

Table 7: Active Search Site Details

Site details	Results
Active Search Site 1	
Date	20/11/2020
Location	Mapped remnant vegetation east of current quarry footprint
Habitat	*Eucalyptus crebra (Narrow-leaved Ironbark) dominated vegetation, Lantana camara* (Lantana) dominates the shrub layer. Minimal native understorey present
Microhabitat searched	Under rocks, within fallen timber, under bark
Timing	1000
Site photo	
Active Site 2	
Date	20/11/2020
Location	Mapped fisheries waterway north of proposed impact area
Habitat	Mapped waterway consisting of *Melaleuca leucadendra* (Weeping Paperbark) and *Melaleuca bracteata* (Black Tea-tree).
Microhabitat searched	Under rocks, under fallen logs, under waterway banks.
Timing	1100

Site details	Results
Site photo	
Active Site 3	
Date	21/11/2020
Location	North of the current quarry footprint.
Habitat	Mapped remnant vegetation. Steep rocky slopes with *Corymbia erythrophloia* (Variable-barked Bloodwood) and *Eucalyptus crebra* (Narrow-leaved Ironbark).
Microhabitat searched	Under rocks, within visible hollows and under large felled trees.
Timing	0930
Site photo	
Active Site 4	
Date	21/11/2020
Location	Mapped remnant vegetation in the centre of the proposed impact area.

Site details	Results
Habitat	Densely vegetated area dominated by *Eucalyptus crebra* (Narrow-leaved Ironbark)
Microhabitat searched	Under rocks, under fallen logs and within hollows
Timing	1020
Site photo	
Active Site 5	
Date	22/11/2020
Location	Located within mapped remnant vegetation in the eastern extent of proposed impact area.
Habitat	Mapped Category B (Remnant) vegetation. Scattered *Eucalyptus crebra* (Narrow-leaved Iron Bark) and *Eucalyptus melanophloia* (Silver-leaf Ironbark).
Microhabitat searched	Within visible hollows, under exfoliating bark, under rocks
Timing	0900
Site photo	
Active Site 6	

Site details	Results
Date	22/11/2020
Location	Within mapped remnant vegetation in the eastern extent of the proposed impact area.
Habitat	Mapped Category B (Remnant) vegetation. Dominated by *Eucalyptus crebra* (Narrow-leaved Ironbark)
Microhabitat searched	Under exfoliating bark, under and within leaf litter mats, under fallen logs and rocks.
Timing	0925
Site photo	
Active Site 7	
Date	22/11/2020
Location	Within remnant vegetation toward the southern boundary of the proposed impact area.
Habitat	Category B (remnant) vegetation dominated by *Eucalyptus crebra* (Narrow-leaved Ironbark) with large rocks throughout.
Microhabitat searched	Under rock and fallen logs, within leaf litter and accessible hollows.
Timing	1020

Site details	Results
Site photo	

4.4.3 Spotlight Searches

Two spotlight meanders were conducted on 19th November and the 21st November 2020 from 1730hrs to 2030hrs. Spotlighting effort was focussed towards areas identified as providing suitable habitat (e.g. trees with hollows) however the majority of the site was assessed and all species recorded. Refer to **Plan 3** for field survey effort.

4.4.4 Anabat sites

Anabat machines (Anabat Swift model) were installed at five locations across the investigation site (see **Plan 1**). Anabat machines record microbat high-frequency calls, storing them for subsequent analysis by an expert, post-survey. Anabat machines were active from sunset to sunrise, via a pre-programmed setting. The following sections detail location of Anabat site. Species detected at Anabat sites are shown in **Table 8** and the full microbat call identification report is available in **Appendix E**.

Table 8: Microbat species identified through ultrasonic calls

Date assessed	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov	Total
Positively identified calls							
Chalinolobus morio			1				1
Nyctophilus sp.			1	1			2
Scotorepens balstoni	1			1			2
Miniopterus australis		1		1	2	38	42
Miniopterus orianae					1	1	2
Chaerephon jobensis	1					26	27
Saccolaimus flaviventris	2	7	1	1	4	20	35
Unresolved calls							

Date assessed	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov	Total
Chalinolobus gouldii / Ozimops ridei	2		1		1		4
Chalinolobus nigrogriseus / Scotorepens greyii					1		1
C. jobensis / S. flaviventris	2				2	32	36
Detector-night Total	8	8	4	4	11	117	152

Anabat site 1

Anabat site 1 was installed on 17th November 2020 in a flyway between patches of large *Eucalyptus crebra* (Narrow-leaved Iron bark) within mapped remnant. This site was highly frequented by cattle resulting in a number of tracks throughout the area. Scattered large hollow bearing trees and stags were identified nearby as suitable microbat roosting habitat.



Photo set 5: Anabat site 1

Anabat site 2

Anabat site 2 was installed on 19th November 2020 on the northern boundary of the proposed impact area. A 'low order' fisheries waterway is mapped approximately 40m north of this Anabat location. No water was present within the mapped waterway however the area was still identified as potentially being utilised by microbats as a flyway. *Melaleuca leucadendra* (Weeping Paperbark) and *Melaleuca bracteata* (Black Tea-tree) were present within the waterway with *lantana camara* (Lantana) in the shrub layer while *Eucalyptus crebra* (Narrow-leaved Ironbark) were present outside the waterway. The waterway and adjacent vegetation were highly frequented by cattle. A number of hollow-bearing trees and stags were identified nearby as suitable microbat roosting habitat.



Photo set 6: Anabat site 2

Anabat site 3

Anabat site 3 was installed on 20th November 2020 within the eastern extent of the proposed impact area. This location was dominated by *Corymbia erythrophloia* (Variable-barked Bloodwood) and *Eucalyptus crebra* (Narrow-leaved Ironbark) and within the highest part of the site. A number of small hollow-bearing trees were identified in this area.



Photo set 7: Anabat site 3

Anabat site 4

Anabat site 4 was installed on 21st November 2020 on the northern side of the current quarry footprint within steep terrain. The site was predominantly *Eucalyptus crebra* (Narrow-leaved Ironbark), *Eucalyptus melanophloia* (Silver-leaf Ironbark) and *Corymbia erythrophloia* (Variable-barked Bloodwood) within mapped remnant vegetation.



Photo set 8: Anabat site 4

Anabat site 5

Anabat site 5 was installed on the 22nd November 2020 on the western edge of the current quarry footprint. This location was identified for its proximity to the only permanent water on-site, being within the pit of the quarry.



Photo set 9: Anabat site 5

4.4.5 Camera sites

Two camera sites operated during this survey period. Cameras were securely attached to a tree with a bait station (small section of PVC pipe containing peanut butter and oat standard mammal bait, and a tin of dog food). Camera 1 was installed east of the current quarry footprint while camera 2 was located in the eastern extent of the proposed impact area (refer **Plan 3**). Cameras were set to bursts of 3 photos with 15-second intervals. This sequence ensures enough photos to enable best opportunity for identification of fauna while prolonging battery life.

Camera site 1

Camera site 1 was installed within a drainage feature comprising of a dry depression with scattered *Melaleuca leucadendra* (Weeping Paperbark) and exotic *Lantana camara* (Lantana) and *Cryptostegia grandiflora* (Rubber Vine) to the east of the current quarry footprint. **Table 9** presents the results of the camera survey.

Table 9: Fauna detected at Camera site 1 during November survey period

Camera site	Date	Species	Common name
1 – Dry depression	18/11/2020	*Cracticus tibicen*	Australian Magpie
1 – Dry depression	19/11/2020	*Corvus orru*	Torresian Crow
1 – Dry depression	20/11/2020	*Rattus rattus*	Black rat



Photo set 10: Camera site 1

Camera site 2

Camera site two was installed in the eastern extent of the site within identified fauna tracks (refer **Plan 3**). The vegetation is mapped remnant consisting of a mix of *Eucalyptus Crebra* (Narrow-leaved Ironbark), *Eucalyptus melanophloia* (Silver leaf Ironbark) and *Corymbia erythrophloia* (Variable-barked Bloodwood) **Table 10** presents the results.

Table 10: Fauna detected at Camera site 2 during November survey period

Camera site	Date	Species	Common name
2 – eastern extent of site	21/11/2020	*Macropus parryi*	Whiptail Wallaby
2 – eastern extent of site	22/11/2020	*Sus scrofa*	Feral Pig
2 – eastern extent of site	23/11/2020	*Petrogale herberti*	Herberts Rock Wallaby



Photo set 11: Camera site 2

4.4.6 Summary of fauna field assessment

The following summarises the findings from the fauna field assessment:

- Overall, the investigation area consists of eucalypt woodland across the full extent of the site. The current quarry footprint and adjacent cleared areas are not represented in the current mapping layer. A number of gullies were present across the subject area which were frequently heavily weed infested with *Lantana camara* and (Lantana) and *Cryptostegia grandiflora* (Rubber Vine)
- There are very few large hollow-bearing trees across the site, with the majority of the site consisting of relatively small canopy species. Small scattered dead trees and stags were observed across the site which often contained hollows. Fauna movement to the south of the site is restricted by a large power easement which has been mostly cleared resulting in scattered eucalypt regrowth and open grasslands.
- A 'low-risk' fisheries mapped waterway is present beyond the northern boundary of the impact area. No water was present during this field survey assessment.
- Two full fauna sites and two modified fauna sites were installed across the site (Refer **Plan 1** for fauna survey sites).
- A total of 38 vertebrate fauna species were definitively detected on-site during assessments. A total of twelve (12) species of mammal (including microbats and introduced species), 17 species of bird, 6 species of reptile and 3 species of amphibian were detected during the course of the surveys. An additional three species of microbat were considered potentially detected onsite due to unresolved calls.
- The *Nature Conservation Act* lists seven (7) species of conservation significance as being present within 5km of the site. *Calyptorhynchus lathami* (Glossy Black Cockatoo), *Geophaps scripta scripta* (Squatter Pigeon), *Ninox strenua* (Powerful Owl) and *Petauroides volans volans* (Southern Greater Glider) are confirmed or likely within five (5) kilometres of the investigation area.
    - *Calyptorhynchus lathami* (Glossy Black Cockatoo) was not detected on-site during surveys. Suitable habitat was not identified within the subject area but potentially suitable habitat exists within the Stanwell Conservation area to the west of the site.
    - *Geophaps scripta scripta* (Squatter Pigeon) is also listed as occurring within the area. Although no individual specimens were observed at the time of the assessment, there is potential for this species to utilise the site.
    - *Ninox strenua* (Powerful Owl) is listed as potentially utilising the site. No individual specimens were recorded during the assessment and lack of suitable habitat was observed across the site.
    - *Petauroides volans volans* (southern greater glider) was not observed during the field survey assessment. Limited suitable habitat was observed on-site during field assessment.
- With the exception of the power easement and quarry footprint, vegetation surrounding the site is well connected to the broader landscape allowing opportunity for fauna movement throughout the area. Stanwell Conservation area is present to the west of the site which likely provides significant habitat value and includes a large dam.

4.5. Threatened species

For the purposes of this report, a significant species has been defined as a species that is:

- Scheduled as critically endangered, endangered, vulnerable or conservation dependent under the Commonwealth EPBC Act; and/or
- Scheduled as endangered, vulnerable, or near threatened under the Queensland NC Act; and/or
- Identified by RRC as a locally significant species in the RRC planning scheme.

4.5.1 Threatened flora

No flora species listed as threatened under the EPBC Act or the NC Act were recorded on-site. Two (2) specimens of the EPBC and NCA listed species *Cycas megacarpa* were recorded adjacent to the site, outside of the site boundary and associated 100m buffer.

Fifteen (15) flora species listed as Threatened under the EPBC Act and/or NC Act were indicated as having the potential to occur within 5km of the subject site (refer **Appendix B** and **Appendix C** for complete search results.). On-ground assessment determined that there was potential for three (3) listed species to occur on, or in close proximity to the site. **Table 11** presents species which have the potential to inhabit the site. No additional flora species classified as threatened under the NC Act were listed as potentially occurring on-site (refer **Appendix D** for full likelihood of occurrence table).

Table 11: A summary of threatened EPBC and/or NCA listed flora species that have the potential to occur on-site

Species	Common Name	Classification		Habitat	Likelihood of occurrence
		EPBC	NCA		
Capparis humistrata	-	-	E	*Capparis humistrata* grows in eucalypt woodland with shrubby understory, on stony hard ridges and serpentinite soil. The site contains a suitable vegetation structure to support the species in addition to four (4) records of the specie in relatively close proximity to the site. This species was not observed during the field survey.	Moderate
Cycas megacarpa	-	E	E	*Cycas megacarpa* occurs in spotted gum (*Eucalyptus maculata*) and narrow-leaved ironbark (*Eucalyptus crebra*) woodland and open forest with a grassy understorey. Vegetation identified on-site is indicative habitat for this species. Field survey identified two (2) specimens of *Cycas megacarpa* adjacent to the site outside the site boundary and associated 100m buffer area.	High

Cycas ophiolitica	-	E	E	*Cycas ophiolitica* grows on hills and slopes in sparse, grassy open forest at altitude ranges from 80–400 m above sea level. Vegetation identified on-site is indicative habitat for this species. Field survey identified two (2) specimens of the similar *Cycas megacarpa* adjacent to the site outside the site boundary and associated 100m buffer area.	High

The EPBC Act PMST listed three (3) Threatened Ecological Communities (TECs) that may occur in, or relate to, the subject site (see section **3.1**). These are described as the following:

- The Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions ecological community occurs in floodplains situated within the upper reaches of the Murray-Darling Basin and southern part of the Fitzroy River on land zone 3. No species representative of this TEC were recorded on-site or within 100m of the site. Further, subject area in entirely land zone 11, not suitable to support this TEC.

- The Poplar Box Grassy Woodland on Alluvial Plains community must have *Eucalyptus populnea* (Poplar Box) as the dominant species in the canopy layer. This TEC corresponds best with RE11.3.2, 11.3.17, 11.4.7, 11.4.12, 12.3.10. None of these RE communities occur on site or within the immediate vicinity of the site and no *Eucalyptus populnea* were recorded

- The Weeping Myall Woodlands TEC occurs in a range of open woodlands to woodlands in which Weeping Myall (*Acacia pendula*) are the sole dominant overstory species. Within Queensland, this TEC occurs within two Regional Ecosystems being 11.3.2 and 11.3.28. Neither of these RE's were confirmed on-site and no *Acacia pendula* were recorded.

No TECs, nor any conditions to support them, were observed on-site. Additionally, 11 threatened plant species were identified as potentially occurring within and/or in the vicinity of the site. Two (2) specimens of *Cycas megacarpa* were identified outside of the subject area and associated 100m buffer. No flora species listed as threatened under the EPBC Act were recorded within the investigation area.

- A search of the NC Act Wildlife Online database listed three (3) threatened flora species as potentially occurring within the area. Two (2) specimens of *Cycas megacarpa* were identified outside of the subject area and associated 100m buffer. No flora species protected under the NC Act were recorded during within the investigation area during field survey.

- Regional Ecosystem mapping shows that the majority of the site is mapped Category B 'remnant' as a composite RE of 11.11.15/11.11.3/11.11.5.

- **Table 12** provides details of these communities.

Cycas megacarpa

Site surveys included thorough, targeted searches for *Cycas megacarpa,* adhering to the Protected Plant Survey Guidelines under the NC Act. As part of this search, two (2) specimens were detected outside the impact site and associated buffer area. A review of online databases (Atlas of living Australia, Biomaps) shows limited local and recent records of the species and no specimens were recorded within the impact area or associated buffer. Following the completion of the protected plant survey by a suitably qualified Ecologist, the Queensland Herbarium are satisfied that the species is not occurring within the impact area and a clearing exemption is submitted. Following this, it is considered that as the systems devised by the expert botanists within Queensland Government are satisfied the species will not be impacted on, the proposed impact is not considered likely to have a significant residual impact and no offsets should be required.

Under the species' Recovery Plan, habitat critical to the survival of the species is defined as, 'Habitat where the remaining viable populations occur.' A viable population of *Cycas megacarpa* is defined in the Recovery Plan as having a minimum of between 3500 and 4500 individuals, only seven populations are known to support these numbers. Despite the site consisting of potentially suitable habitat to the species it is not considered to provide critical habitat and it does not support a viable population. As such, the proposed impact is not considered likely to adversely affect habitat critical to the survival of the species.

Table 12: Regional Ecosystems mapped within the proposed impact area.

Mapped Vegetation Community	Regional Ecosystems	Description
1	Least Concern RE11.11.15	Eucalyptus crebra woodland on deformed and metamorphosed sediments and interbedded volcanics
2	Least concern RE11.11.3	Microphyll vine forest +/- Araucaria cunninghamii on old sedimentary rocks with varying degrees of metamorphism and folding
3	Least Concern RE11.11.5	Corymbia citriodora, Eucalyptus crebra, E. acmenoides open forest on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges

4.5.2 Threatened fauna species

No fauna species listed as threatened under the EPBC Act or the NC Act were recorded on-site.

The EPBC Act PMST and NC act wildlife online listed 37 fauna species listed as Threatened to occur within 5km of the investigation area (see **Appendix B** and **Appendix C** for the complete search results). Field surveys did not definitively detect the presence of these species within the site. A summary of EPBC and NCA listed fauna species with a potential to occur on-site are shown in **Table 13** (refer **Appendix D** for full likelihood of occurrence table)

Table 13: Summary of threatened EPBC and/or NCA listed fauna species that have the potential to occur on-site.

Species	Common Name	Classification		Habitat	Likelihood of occurrence
		EPBC	NCA		
Geophaps scripta scripta	Squatter Pigeon (southern)	V	V	The squatter pigeon inhabits open grasslands and woodlands with native understory. This vegetation structure was present across the site although no permanent water was present. There have been a number of records of this species in relatively close proximity to the site.	Moderate
Dasyurus hallucatus	Northern Quoll	E	-	The northern quoll occupies a diverse range of habitats including rocky areas and eucalypt forest/woodlands. Elements of suitable habitat were present on-site however few large DBH hollow-bearing trees were observed. A single record of the species was shown in close proximity to the site.	Low
Petauroides volans	Greater Glider	V	V	The greater glider is mostly restricted to eucalypt forests and woodlands with abundant (large) hollow-bearing trees. While the site consists of relatively intact eucalypt woodland there were very few large DBH hollow-bearing trees present on-site. No sighting of the species post-1998 were recorded in close proximity of the site.	Low
Phascolarctos cinereus	Koala	V	V	The Koala is found in a range of habitats, from coastal islands and tall eucalypt forests to low woodlands inland. Koala habitat trees are present throughout the site. However, no sighting of koala has been recorded within close proximity of the site and no evidence of koala was observed during the field survey.	Moderate

4.6. RRC Waterways

Rockhampton Regional Council has mapped a number of waterways that traverse the boundary of the proposed impact area. No waterways under RRC are mapped within the impact area (refer **Figure 9**).

4.7. DAF Mapped Waterway

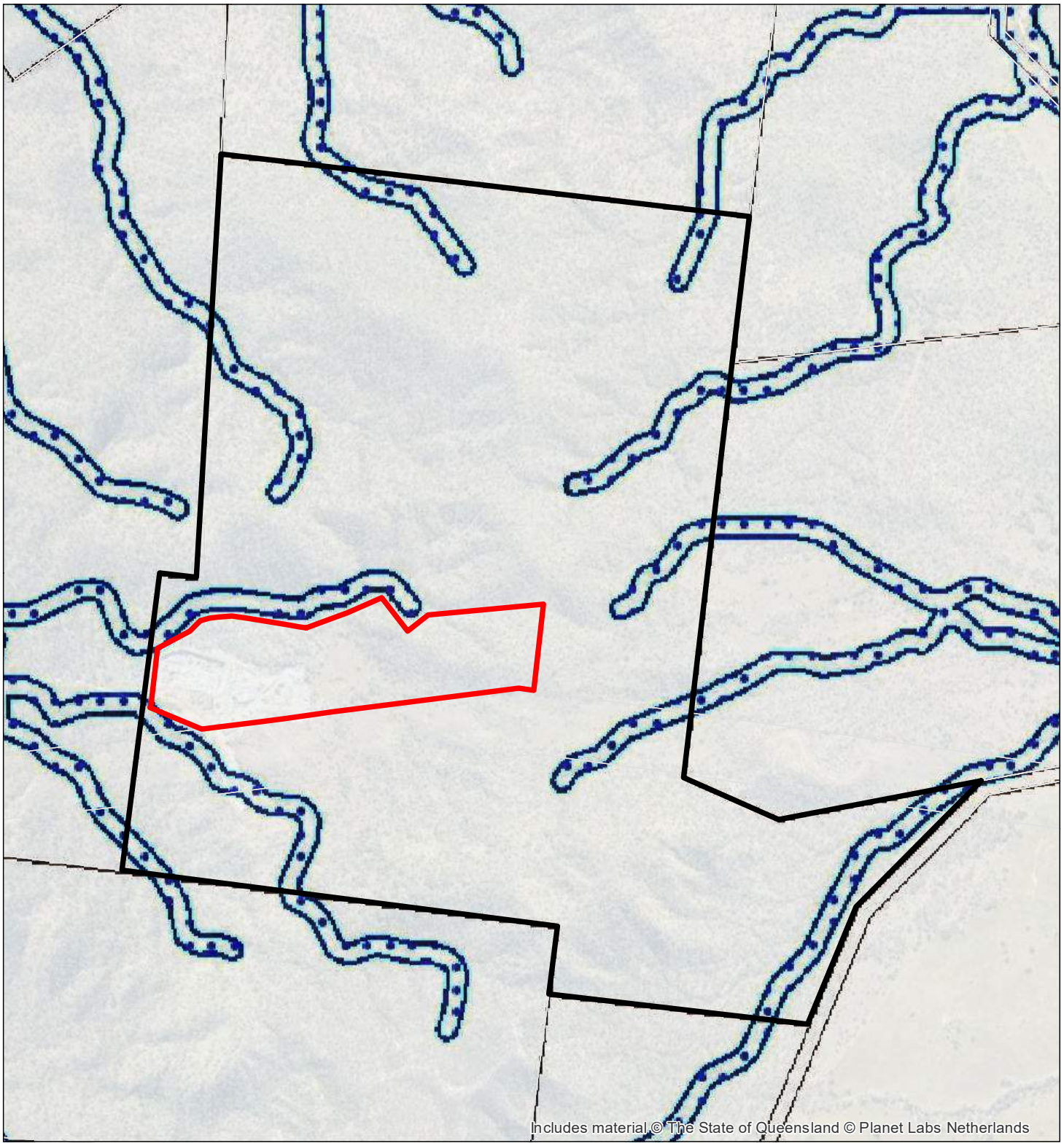
Waterways mapped under the Fisheries Act are not present within the proposed impact area. However, a single 'low risk' waterway for waterway barrier works is mapped adjacent to the northern boundary, outside of the impact area (refer **Figure 10**). An assessment of this mapped waterway was carried out by Ecologists from Saunders Havill.

4.7.1 Fisheries Waterway Assessment

Overview	Comment
Site 1	Beyond northern boundary of proposed impact area
Fisheries Waterway Value	Low
Field Determination	Consistently intact riparian species present along banks of mapped waterway. Continuous bed and bank features present. Channel width was approximately 1.5m with and sandy and rocky substrate. No water or pools were present during survey and no evidence of water dependent macrophytes were observed. The waterway was heavily weed infested with *Lantana camara* (Lantana) and *Cryptostegia grandiflora* (Rubber Vine).
Local Land Use	Rural/Extractive industry
Average bankfall width	1.5-2m
Dominant substrate	Soils associated with landzone 3. Sandy substrate with rocks throughout.
Variety of habitats	Patches of open grassland and intact woodland.
Flow Regime	Ephemeral
Channel Shading	Approximately 15% channel shading.
Macrophytes	No macrophytes recorded within the vicinity of the mapped waterway.
General Description and habitat attributes	The mapped waterway runs adjacent to the impact area's northern boundary displaying continuous bed and bank features and riparian vegetation. The waterway is heavily weed infested and evidence of cattle use was present. No water or macrophytes were observed during the survey effort. However, it is likely this waterway retains water during heavy rain events facilitating fish passage.



Photo set 12: Fisheries 'low' mapped waterway adjacent to the northern boundary of the impact area**.**



Legend

- Site DCDB
- Imapct Area
- Qld DCDB
- RRPS - Waterways

Figure 8

Rockhampton Regional Council Waterways

AMCOR Quarries

File ref. 10314 E Figure 8 Rockhampton RC Waterways A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

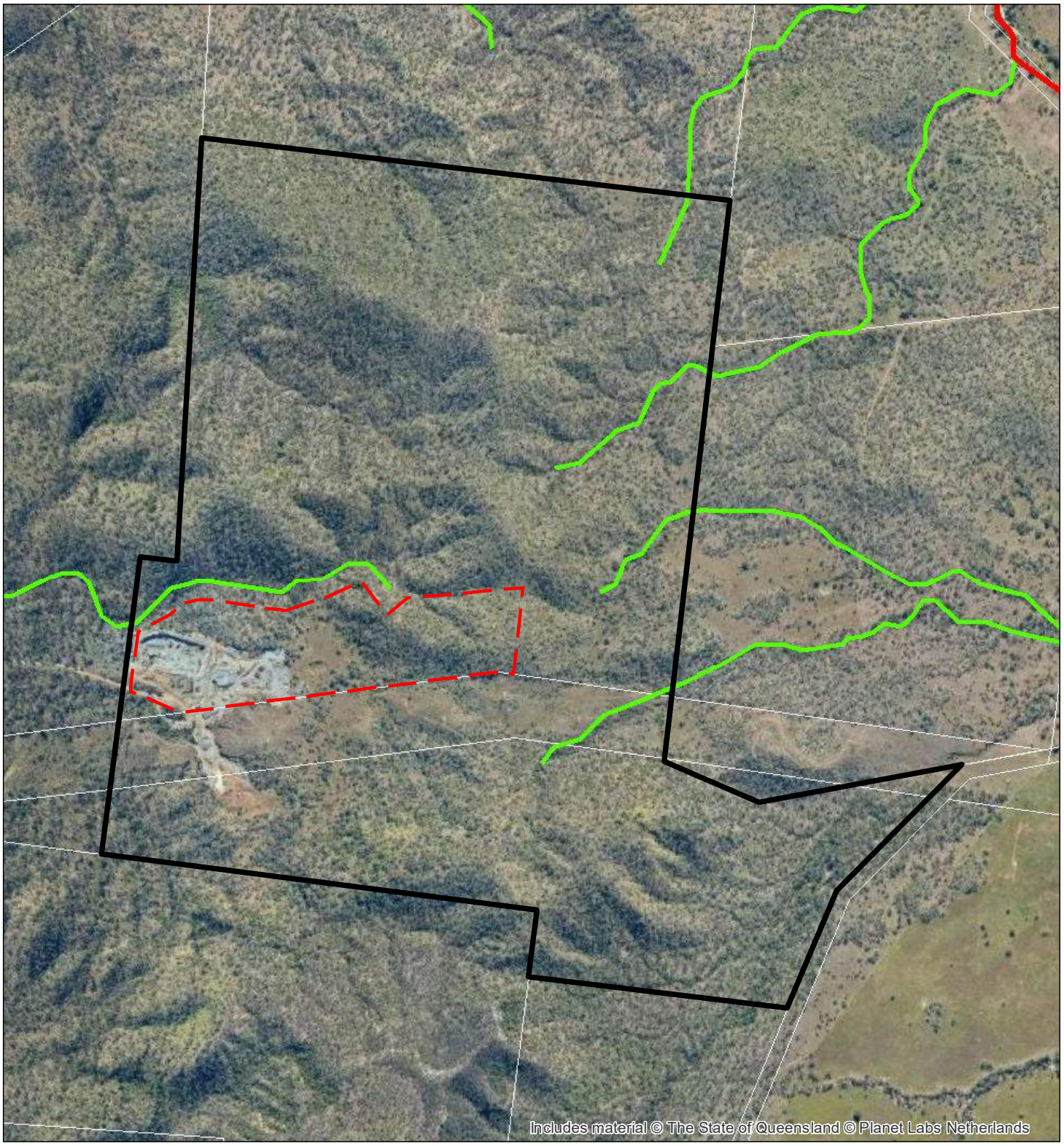
N

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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Layer Source: © State of Queensland (Department of Natural Resources, Mines and Energy) 2020



Legend

- Site DCDB
- Qld DCDB
- Impact Area

Risk of Impact

- 1 - Low
- 2 - Moderate
- 3 - High
- 4 - Major

Figure 9

Fisheries - Waterways for Waterway Barrier Works

AMCOR Quarries

File ref. 10314 E Figure 9 Waterways A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

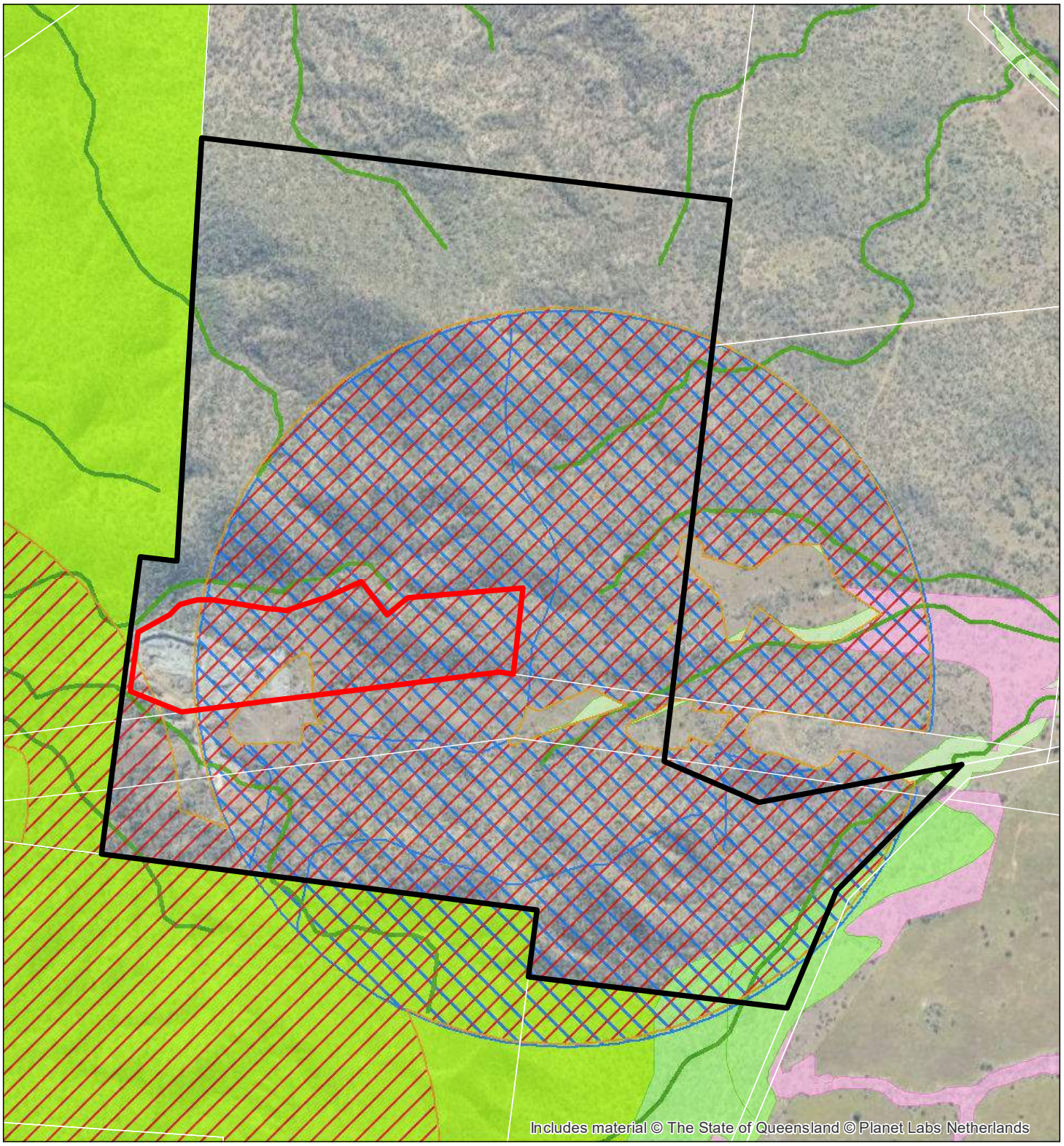
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Legend

- Site DCDB
- Qld DCDB
- Impact Area
- MSES Wildlife habitat (endangered or vulnerable)
- MSES Regulated vegetation (intersecting a watercourse)
- MSES Regulated vegetation (essential habitat)
- MSES Regulated vegetation (category B)
- MSES Regulated vegetation (category C)
- MSES Regulated vegetation (category R)
- MSES Protected Area (nature refuge)

Figure 10

Matters of State Environmental Significance

AMCOR Quarries

File ref. 10314 E Figure 10 MSES A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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4.8. RRC Environmental Significance Overlay

The Rockhampton Regional Planning Scheme has mapped a number of constraints throughout the investigation area including:

- Biodiversity Areas
- Corridors and Wildlife Habitat
- Waterways
- Bushfire Hazard

4.8.1 Biodiversity Areas

The majority of the subject area is mapped as MSES and MLES – General under the Rockhampton Regional Planning Scheme (refer **Figure 8**)

4.8.2 Waterways and wetlands

A number of waterways mapped under the Rockhampton Regional Planning Scheme are shown traversing the boundary of impact area. No waterways mapped under RRC planning scheme are shown within the proposed impact area (refer **Figure 9**).

A response to the Rockhampton Regional Plan overlays is presented in Appendix F.

4.9. Offsets under the Environmental Offsets Act 2014

Environmental offsets in Queensland are regulated under the Environmental Offsets Act 2014, Environmental Offsets Regulation 2014 and the Environmental Offsets Policy. This legislation details the environmental and/or financial compensation which proponents are required to provide when causing 'significant residual impacts of particular activities on prescribed environmental matters' in the course of undertaking an action. These 'prescribed environmental matters' include:

- Matters of National Environmental Significance (MNES);
- Matters of State Environmental Significance (MSES); and
- Matters of Local Environmental Significance (MLES).

Environmental offsets may be required when an action (prescribed activity) will impact on one of these 'prescribed environmental matters' and following application of avoidance and mitigation options, this action is still deemed to impose a 'significant residual impact' on one or more prescribed environmental matters. The following image is taken from the Queensland Environmental Offsets Policy Guide v1, providing a visual indication of when an offset may be required under state legislation.



The proposed action (prescribed activity) contains a polygon mapped as essential habitat for MSES, specifically, the state and federally threatened species, *Cycas megacarpa*. No specimens of this species were recorded on-site during site surveys. No additional prescribed matter, as defined under the EO Act is mapped or was detected onsite during field assessments.

Assessment of this matter against the Significant Residual Impact Guidelines (DSDIP) applies to the site as an Environmentally Relevant Activity (Module 4 - MSES and Module 8 – essential habitat), assessable under the *Sustainable Planning Act 2009*. If it is determined that a Significant Residual Impact will occur on the matter identified onsite, environmental offset consideration is triggered. The Significant Residual Impact Guidelines (DSDIP) specify that supporting technical documents completed by a suitably qualified person will be required as part of the assessment to provide evidence on the extent and nature of any potential impact.

However, the Offsets Policy specifies that following sufficient survey, confirmed presence or absence of a prescribed matter may be considered in the assessment. Schedule 2 of the Offsets Regulation details that an offset for a prescribed matter will not be applied where the matter does not exist (the mapping is incorrect) and this has been confirmed by a suitably qualified person. As a component of field surveys, the focal species, *c. megacarpa,* was surveyed for using the Queensland Flora Survey Guidelines - Protected Plants methodology. The species was not detected within the site, or the associated 100m buffer zone. In consideration of this, in addition to the species assessment outcomes under MNES, offsets are considered unlikely due to the determination that the proposed activity is unlikely to have a significant residual impact on the prescribed matter.

Several threatened species, protected under the EPBC Act were mapped as having the potential to occur onsite under the EPBC Act, triggering a detailed assessment of these species and their habitat against the EPBC Act Significant Residual Guidelines and associated national recovery plans. These assessments are detailed within the associated MNES report and are not addressed in this report. However, the outcome following assessment determined there to be no Significant Residual Impacts on any species listed under the EPBC Act.

5. Impact assessment and development analysis

5.1. Proposed development

The proposed action is an eastward expansion of the current quarry footprint. The proposed development will result in the removal of trees within a section of Lot 1 on RP616642 identified as the study area. All vegetation within the proposed footprint will be removed for extractive purposes. As part of the proposed development, State Code 16 – Native Vegetation Clearing has been addressed and the proposed development has been confirmed to comply with the provisions of the SDAP.

5.2. Potential impacts

The key potential ecological impacts associated with the development proposal are as follows:

5.2.1 Vegetation clearing

Clearing of vegetation to support the development will reduce vegetation cover and therefore result in a reduction of habitat and resources for flora and fauna within those communities. Ecological field surveys did not identify any unique or significant biodiversity values within the clearing area. As such, the impact to vegetation is considered to be minimal.

5.2.2 Weeds

Increased vehicle movement during the construction phase has the potential to increase the spread of weeds in the area, particularly during the vegetation clearing phase. With implementation of standard mitigation measures, the project is likely to result in a negligible impact to ecological values due to the potential introduction/spread of weeds.

5.2.3 Vehicle movements

During vegetation clearing, establishment and operation of the quarry site, a large number of vehicles may be required on the subject site. Direct impacts from vehicle movements on threatened species and vegetation communities include:

- damage or destruction of vegetation outside of planned clearing or fauna habitat by vehicles operating within the site; and
- fauna strike.

Indirect impacts from vehicle movements include:

- interference with fauna through visual and noise impacts. This in turn can affect feeding, roosting, breeding or nesting behaviour;
- introducing and/or spreading weeds or feral animals carried on or in vehicles, resulting in deterioration or loss of vegetation and important fauna habitat; and
- damage or destruction of vegetation and fauna habitat through smothering by dust generated by vehicles traversing the project area.

With implementation of standard mitigation measures, the project is likely to result in minor impact to ecological values due to vehicular movements. Further, ecological field survey confirmed only common fauna species are present on the site.

5.2.4 Earthworks

Construction activities have the potential to generate dust emissions. Dust emissions during construction will be temporary. The main sources of dust will be generated via:

- wheel-generated dust from the haul roads created for the construction phase;
- dust lift-off from exposed surfaces (e.g. construction roads and pads);
- earthworks, including construction of the embankments, and moving, dumping and shaping material; and
- vegetation and soil clearing of the land.

Excessive deposition of dust on leaves of plants can suppress the growth and photosynthesis, resulting in reduced habitat quality for fauna. High levels of airborne dust can irritate the respiratory systems of fauna and potentially result in ingestion of dust-coated seeds and other foods. Excessive deposition of dust on open water bodies may also degrade water quality and overall habitat quality for fauna. With implementation of standard mitigation measures, the project is likely to result in a temporary and minor impact to ecological values due to the generation of dust.

5.2.5 Light emissions during construction and operation

Artificial light can affect both nocturnal and diurnal animals by disrupting behavioural patterns, with quality of light (e.g. wavelength, colour), intensity and duration potentially evoking different faunal responses. Impacts from increased light levels include disorientation from, or attraction toward, artificial sources of light; mortality from collisions with structures; and effects on light-sensitive cycles of species (e.g. breeding and migration for fauna and flowering in plants). An artificial increase in lighting can also affect abundance of predators.

Presence and intensity of artificial light in the project area may temporarily increase during the construction phase; however, night works will not be common. Lighting will be directed to construction areas within the project area. Some light spillage will be inevitable and is likely to be contained. Potential impacts associated with light emissions will be temporary and unlikely to be significant.

With implementation of standard mitigation measures, the project is likely to result in a negligible impact to ecological values due to the use of light pollution during construction. The quarry will be operational long-term predominantly during daylight hours.

5.2.6 Noise and vibration

Noise levels greater than existing ambient noise levels are expected during the construction and ongoing extraction processes of a functioning quarry. Sources of noise are likely to consist of noise in short, intense pulses from mobile plant equipment, and more prolonged noise, with consistent vibration, pitch and volume from generators, excavators, loaders and pumps, in addition from noise from vehicles.

Both steady continuous and single noise events have the potential to lead to ecological impacts. Construction noise is expected to elicit some avoidance response from fauna using the surrounding vegetation though, with consideration of the extent of habitat available in the study area, this is likely to be a temporary and negligible to minor impact.

5.2.7 Waste disposal

Inappropriate disposal of non-hazardous wastes can attract invasive species such as feral cats, wild dogs and introduced rats (amongst other fauna) to site. This may exacerbate potential impacts (e.g. invasive species introduction, road mortality). Litter may also enter surrounding environments. With implementation of standard mitigation measures, the project is likely to result in a negligible impact to ecological values due to the generation and handling of waste.

5.2.8 Hazardous and dangerous goods

Spills and leaks from transfers (e.g. fuel and/or chemicals) and inadequate storage of dangerous goods and hazardous wastes could result in point-source contamination of surrounding land. Direct adverse impacts could include toxic impacts on vegetation (resulting in degradation or loss of vegetation and habitats), direct toxic impacts on fauna (from contact, inhalation or ingestion) or indirect impacts on threatened and migratory species from habitat loss. Direct adverse impacts on surface and groundwater quality are also possible.

With the application of standard mitigation and management measures, impacts from liquid and solid waste disposal will be avoided or localised and small in scale. Further to this, the likelihood of significant spillages is considered low. Therefore, the project is likely to result in a negligible impact to ecological values due to potential spills and leaks.

5.2.9 Increased human presence

Increased human activity during construction has the potential to disturb fauna within adjacent habitat areas. Resulting impacts to fauna include heightened vigilance and predator avoidance, which can disrupt foraging and roosting efficiency or deter wildlife from using particular areas. Impacts essentially represent a reduction in core habitat due to edge effects. The project is likely to result in a temporary and minor impact to ecological values due to increased human presence on site during the construction and operational period.

5.3. Ongoing disturbances

After initial site establishment, significant increases in direct and indirect anthropogenic impacts on the surrounding ecological values are not anticipated. Quality habitat for native fauna and flora will remain surrounding the site, with works confined to the 25.6ha proposed site. All operations will remain within the site, with substantial boundary fences installed to prevent injury or mortality to people and fauna external to the site operations. In addition, the site exists within a proposed state biodiversity corridor connecting a 10km-wide stretch of land, providing a north-west-south-east connection in a regional context. The site will remove a small patch of this habitat in relation to the greater corridor, allowing a large-scale connection to remain around the site. Potential increase to traffic along the roads at the extremity of the site indicate continuing risks to ecological values from:

- vehicle movements; and

- noise and light pollution.

Each potential impact associated with the increased traffic is described in detail in the following sections.

5.3.1 Vehicle strike

Upon the operation phase of the quarry expansion, vehicle traffic may increase (compared to baseline conditions) on connector roads, increasing the likelihood of fauna strike. The implementation of a fauna management Plan (FMP) will be developed for the proposed impact area.

5.3.2 Noise and light

Noise levels are likely to increase once the extension is operational as there will be increased vehicular traffic and machinery. An increase in road noise will be expected in and out of the quarry.

Artificial light from machinery may affect nocturnal and diurnal animals by disrupting patterns, with quality of light (e.g. wave length and colour), intensity and duration potentially evoking different responses. The presence and intensity of artificial light will have the most impact at the edge of adjacent vegetation communities. Impacts from increased light levels are anticipated to be minimal as the quarry will cease operation at night.

6. Conclusion

This EAR was prepared on behalf of AMCOR Quarries & Concrete Pty Ltd who propose to extend the extraction footprint of Stanwell Quarry to a total of 25.6ha (see **Table 1** for included lots). This EAR provides a review of a number of the ecological values across the site in accordance with Commonwealth, State and Local Government legislation.

Overall, the following conclusions can be made:

- The investigation area includes rural/extractive industry land with cattle grazing and quarry operation. The majority of this site exists as Category B 'remnant' vegetation of Least Concern status. It should be noted that the current mapping layer encompasses the quarry footprint and associated cleared areas.
- A number of waterways mapped under RRC and DAF are present adjacent to the impact area. No waterways were mapped within the proposed impact area.
- A waterway assessment of the fisheries mapped waterway was carried out adjacent to the northern boundary of the site. This waterway consisted of continuous bed and bank features, obvious flow path and intact riparian vegetation. No water was present during field assessment.
- No threatened species nor TECs listed under the EPBC Act or NC Act were definitively recorded on site during field assessments. Two (2) specimens of the NCA and EPBC listed *Cycas megacarpa* were recorded outside of the impact area and associated 100m buffer.
- The project area contains relatively uniform vegetation characteristics including a mix of flora species typically found within an rural setting. A total of 99 flora species were recorded within the application area. Of these species, 68 were native and 31 were introduced or planted species. Five (5) species are listed as restricted invasive plants under the *Biosecurity Act 2014* and will require specific levels of management.
- Fauna recorded across the site included small reptiles, mammals and avifauna, some which are likely to utilise the site as part of a broader home range. All species detected are considered common in a local or regional context with no species listed as Threatened under state or federal legislation definitively recorded on site.

7. Recommendations

Several supplementary reports and management plans are recommended in association with vegetation clearing and operational works for the proposed quarry expansion. The following provides preliminary detail for these management plans.

7.1. Vegetation Management Plan

A Vegetation Management Plan (VMP) should form part of the broader management document submitted as conditions of approval for the project site.

The VMP should cover clearing of all vegetation listed in this report in addition to all trees mapped as significant individual trees. It should include details on:

- all works likely to impact existing vegetation;
- temporary and permanent exclusion and protection fencing;
- roles and responsibilities for site contractors, the developer and the consultant group;
- stockpiling and site access locations;
- a clearing sequence plan showing the commencement of clearing and direction of removal (this should be in conjunction with the Fauna Management Plan (FMP) to allow for the appropriate flushing of fauna towards safe havens and/or the application of an appropriate relocation program if necessary);
- links to weed management and revegetation proposals; and
- stock piling and reuse of cleared vegetation.

7.2. Fauna Management Plan

A Fauna Management Plan (FMP) should be prepared for potential impacts of the construction phase covering the loss of vegetated areas, isolated trees and likely barriers and impediments to local dispersal.

The FMP should link closely with the VMP and include details on:

- species confirmed and likely to use the site, focusing on those most likely impacted by development works;
- a list of relevant State and Commonwealth legislation constraints and controls for fauna potentially affected by development works;
- a plan showing existing habitat opportunities and locations;
- details of the threats to existing fauna species;
- the clearing sequence plan from the VMP;
- management and mitigation measures – i.e. temporary use of fauna exclusion fencing;
- description of fauna spotter role, contacts and certification; and
- specific fauna management procedures for potential or known habitat trees.

7.3. *Nature Conservation Act 1992* Reporting

As the works area is located within a 'high risk' area for protected plants, a flora survey must be completed in accordance with the Protected Plants Guidelines. A flora survey of clearing impact areas must be completed by a suitably qualified ecologist, inclusive of a 100 m buffer, and a permit to clear or an exemption confirmation must be obtained from the Department of Environment and Science (DES) prior to clearing in **high risk areas**.

Surveys adhering to the guidelines have been completed and an exemption report will be submitted to DES.

7.4. DAF Requirements

State Code 18 assessment or assessment against the exemptions for Waterway for Waterway Barrier Works

If water crossing structures or any potential barriers or impediments to the waterways are proposed, a response to State Code 18 will be required under the *Fisheries Act 1994*. If works are deemed to be a barrier to potential fish passage then a referral to the Department of Agriculture and Fisheries may be required.

7.5. Water Act 2000 Requirements

Any operational works which are to be completed within instream banks of a waterway on-site must comply with the exemption conditions under the Water Act 2000 or apply to the Department of Natural Resources, Mines and /energy (DNRME) for a Riverine Protection Permit.

8. Appendices

Appendix A

Fauna List

Appendix B

EPBC Act 1999

PMST search results

Appendix C

Nature Conservation Act 1992

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Likelihood of Occurrence

EPBC and NCA listed species

Appendix E

Microbat Call Identification Report

Appendix F

Rockhampton Regional Council Overlay Code response

Appendix A

Fauna List

Species	Common name	Invasive
Mammals		
Macropus parryi	Whiptail Wallaby	
Mus musculus	House Mouse	
Petrogale herberti	Herbert's Rock Wallaby	
Rattus rattus	Black Rat	
Sus scrofa	Wild Pig	X
Birds		
Aquila audax	Wedge-Tailed Eagle	
Calyptorhynchus banksii	Red-Tailed Black Cockatoo	
Calyptorhynchus funereus	Yellow-Tailed Black Cockatoo	
Centropus phasianinus	Pheasant Coucal	
Corvus orru	Torresian Crow	
Coturnix ypsilophora	Brown Quail	
Cracticus nigrogularis	Pied Butcherbird	
Cracticus tibicen	Australian Magpie	
Dacelo novaeguineae	Laughing Kookaburra	
Grallina cyanoleuca	Magpie Lark	
Malurus splendens	Superb Fairy Wren	
Manorina melanocephala	Noisy Miner	
Meliphaga lewinii	Lewin's Honeyeater	
Melithreptus albogularis	White-Throated Honeyeater	
Platycercus adscitus	Pale Headed Rosella	
Strepera graculina	Pied Currawong	
Trichoglossus moluccanus	Rainbow Lorikeet	
Amphibians		
Bufo marina	Cane Toad	X
Litoria caerulea	Green Tree Frog	
Platyplectrum ornatum	Ornate Burrowing Frog	
Reptiles		
Vermicella annulata	Bandy Bandy	
Carlia vivax	Tussock Rainbow-Skink	
Cryptoblepharus pulcher	Elegant Snake-Eyed Skink	
Ctenotus taniolatus	Copper-Tailed Ctenotus	
Diplodactylus vittatus	Eastern Stone Gecko	
Heteronotia binoei	Bynoe's Gecko	

Appendix B

EPBC Act 1999

PMST search results

Australian Government
Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

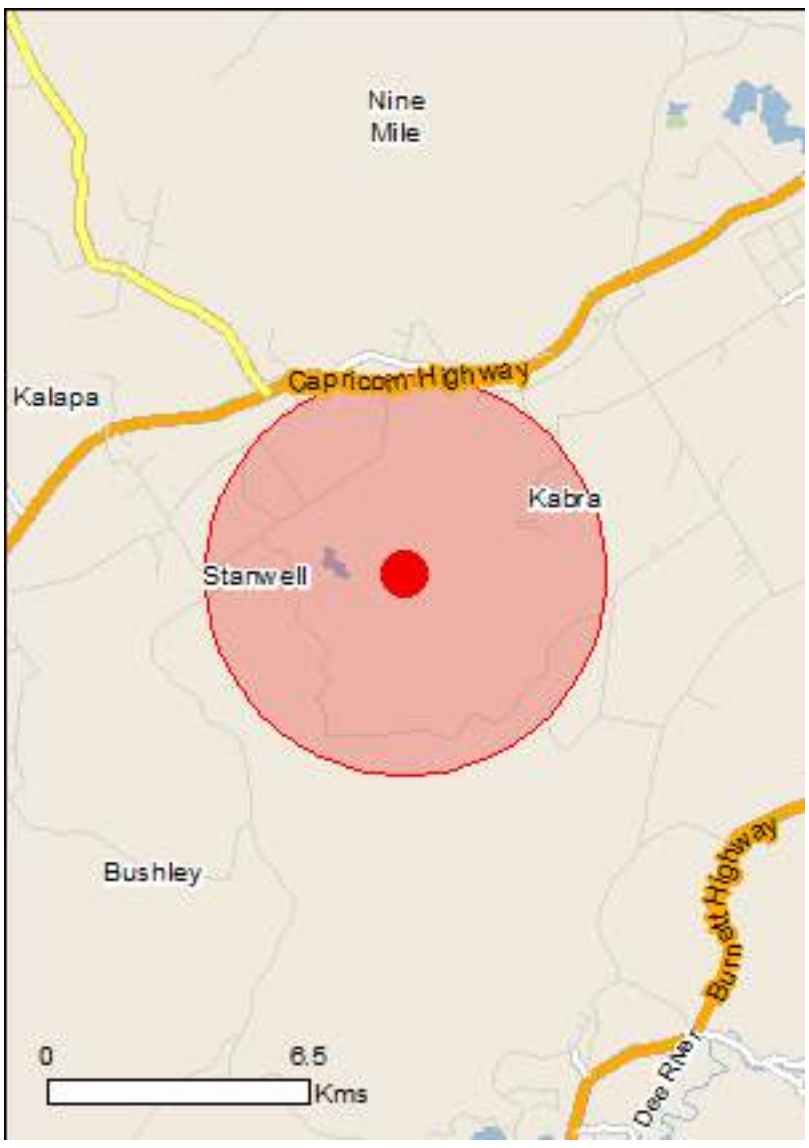
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 08/10/20 08:08:50

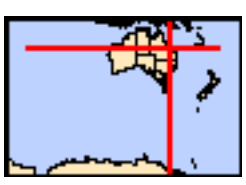
Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

Coordinates
Buffer: 5.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	31
Listed Migratory Species:	15

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	21
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	3
Regional Forest Agreements:	None
Invasive Species:	30
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat likely to occur within area
Cadellia pentastylis Ooline [9828]	Vulnerable	Species or species habitat may occur within area
Cossinia australiana Cossinia [3066]	Endangered	Species or species habitat likely to occur within area
Cycas megacarpa [55794]	Endangered	Species or species habitat known to occur within area
Cycas ophiolitica [55797]	Endangered	Species or species habitat likely to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat known to occur within area
Marsdenia brevifolia [64585]	Vulnerable	Species or species habitat may occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat likely to occur within area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area
Rheodytes leukops Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver [1761]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Marine Species		
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus		
Osprey [952]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans		
Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Reptiles		
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Dovecot	QLD
Rainbow Mountain	QLD
Stanwell Power Station	QLD

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		

Name	Status	Type of Presence
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Vachellia nilotica Prickly Acacia, Blackthorn, Prickly Mimosa, Black Piquant, Babul [84351]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-23.52213 150.35212

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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Appendix C

Nature Conservation Act 1992

Wildlife online search results

Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: Native
Status: Rare and threatened species
Records: All
Date: All
Latitude: -23.5221
Longitude: 150.3521
Distance: 5
Email: meganmckinney@saundershavill.com
Date submitted: Thursday 08 Oct 2020 07:09:54
Date extracted: Thursday 08 Oct 2020 07:20:02

The number of records retrieved = 7

Disclaimer

As the DSITIA is still in a process of collating and vetting data, it is possible the information given is not complete. The information provided should only be used for the project for which it was requested and it should be appropriately acknowledged as being derived from Wildlife Online when it is used.

The State of Queensland does not invite reliance upon, nor accept responsibility for this information. Persons should satisfy themselves through independent means as to the accuracy and completeness of this information.

No statements, representations or warranties are made about the accuracy or completeness of this information. The State of Queensland disclaims all responsibility for this information and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Cacatuidae	*Calyptorhynchus lathami erebus*	glossy black-cockatoo (northern)		V		1
animals	birds	Columbidae	*Geophaps scripta scripta*	squatter pigeon (southern subspecies)		V	V	14
animals	birds	Strigidae	*Ninox strenua*	powerful owl		V		1
animals	mammals	Pseudocheiridae	*Petauroides volans volans*	southern greater glider		V	V	2
plants	land plants	Acanthaceae	*Graptophyllum excelsum*			NT		1
plants	land plants	Capparaceae	*Capparis humistrata*			E		3/2
plants	land plants	Cycadaceae	*Cycas megacarpa*			E	E	6/2

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.* The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.* The values of EPBC are Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Extinct in the Wild (XW) and Vulnerable (V).

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix D

Likelihood of Occurrence
EPBC and NCA listed species

Likelihood of occurrence assessment

Likelihood of occurrence	Assessment criteria
Unlikely	No previous records of the species within the locality and one or more of the following criteria is met: • Not previously recorded on the referral area and surrounds and the referral area is beyond the current known geographic range; or • Dependent on specific habitat types or resources that are not present on the referral area; or • Considered extinct in the wild.
Low	No previous records of the species within the locality and one or more of the following criteria is met: • Site and local connectivity contains marginal habitat excluding suitable/critical habitat attributes; • Lack of recent records exist in a regional context (use 1980 as a delineation); or • Potential for vagrant or individual of the species to survive short-term;
Moderate	Species previously recorded within the locality and one or more of the following criteria is met: • Previously recorded in proximity to the referral area (*i.e.,* vagrant individuals); or • Potential habitat typologies or resources are present on the referral area.
High	Species previously recorded within the locality and one or more of the following criteria is met: • Previously recorded on the referral area; • Dependent on habitats or habitat resources that are available on the referral area; or • Suitable habitats are available on the referral area that are capable of supporting a resident population or individuals of the species.
Known	Flora species or ecological community positively identified during field surveys within the referral area. Fauna species positively recorded during field surveys within the referral area or adjacent habitats.

Matters of National Environmental Significance						
Name	**Status**	**Type of presence**	**Description of the community/preferred habitat**	**Likelihood of Occurrence Analysis**	**Desktop Likelihood of occurrence (on-site)**	**Field Survey Confirmed Likelihood of occurrence (on-site)**
Threatened Ecological Communities						
Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	E	Community may occur within area	The Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions ecological community is associated with the floodplains and drainage areas of the Darling Riverine Plains and the Brigalow Belt South IBRA bioregions. This ecological community represents occurrences of one type of eucalypt woodland where *Eucalyptus coolabah subsp. coolabah* (Coolibah, Coolabah) and/or *Eucalyptus largiflorens* (Black Box) are the dominant canopy species and where the understorey tends to be grassy. The following Regional Ecosystems form part of or align with the TEC: 11.3.3, 11.3.15, 11.3.16, 11.3.28 and 11.3.37.	Desktop analysis and field surveys confirmed that species associated with Coolibah – Black Box Woodlands do not occur on -site.		
Weeping Myall Woodlands	E	Community may occur within area	The Weeping Myall Woodlands ecological community occurs on the inland alluvial plains west of the Great Dividing Range in NSW and Queensland. It occurs in the Riverina, NSW South Western Slopes, Darling Riverine Plains, Brigalow Belt South, Brigalow Belt North, Murray-Darling Depression, Nandewar and Cobar Peneplain IBRA Bioregions. The ecological community currently occurs in small pockets throughout this range. Although the species *Acacia pendula* occurs widely in Queensland, the Weeping Myall Woodlands ecological community is restricted to small patches that occur within two regional ecosystems in Queensland. These are: 11.3.2 *Eucalyptus populnea* woodland on alluvial plains;	Desktop analysis and field surveys confirmed that Weeping Myall Woodlands do not occur on-site.		

			and 11.3.28 *Casuarina cristata* ± *Eucalyptus coolabah* open woodland on alluvial plains.	
Poplar Box Grassy Woodland on Alluvial Plains	E	Community may occur within area	The Poplar Box Grassy Woodland on Alluvial Plains ecological community is typically a grassy woodland with a canopy dominated by *Eucalyptus populnea* and understorey mostly of grasses and other herbs. The ecological community mostly occurs in gently undulating to flat landscapes and occasionally on gentle slopes on a wide range of soil types of alluvial and depositional origin. In Queensland, this TEC corresponds with 11.3.2, 11.3.17, 11.3.7, 11.4.12 and 12.3.10.	Desktop analysis and field surveys confirmed that Poplar Box Grassy Woodland on Alluvial Plains do not occur on-site.

Listed Threatened Species

Scientific name	**Common name**	**Listing Status***		**EPBC code**	**Habitat and Distribution**	**Microhabitat keywords**	**Likelihood of Occurrence Analysis**	**Desktop Likelihood of occurrence (on-site)**	**Field Survey Confirmed Likelihood of occurrence (on-site)**
		EPBC Act	**NC Act**						
Birds									
Calidris ferruginea	Curlew Sandpiper	CE	E	856	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. In Queensland, scattered records occur in the Gulf of Carpentaria, with widespread records along the coast south of Cairns.		No suitable foraging or breeding habitat occurs on-site.	Unlikely	Unlikely
Calyptorhynchus lathami lathami	Glossy Black-cockatoo	-	V	-	This species prefers woodland areas dominated by she-oak *Allocasuarina*, or open sclerophyll forests and woodlands with a stratum of *Allocasuarina* beneath *Eucalyptus, Corymbia* or *Angophora*. Glossy black-cockatoos have also been observed in mixed *Allocasuarina*, *Casuarina*, cypress *Callitris* and brigalow *Acacia harpophylla* woodland assemblages. In SEQ west of the	Allocasuarina, Casuarina	Preferred vegetation composition dominated by Allocasuarina or Casuarina is absent from site. It is unlikely this species would utilise the vegetation on-site.	Unlikely	Unlikely

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					Great Dividing Range, they have been observed feeding in remnant belah *Casuarina cristata* and bulloak *Allocasuarina luehmannii* forests. This species is also known to utilise appropriate remnant woodlands, and individual or small pockets of *Allocasuarina* and *Casuarina* feed trees in urban areas				
Erythrotriorchis radiatus	Red Goshawk	V	V	942	A wide ranging and highly mobile species generally observed over eucalypt habitats. This species prefers forest and woodland with a mosaic of vegetation types, large prey populations (birds) and permanent water. The vegetation types include eucalypt woodland, open forest, tall open forest, gallery rainforest, swamp sclerophyll forest and rainforest margins. Habitat has to be open enough for fast attack and manoeuvring in flight, but provide cover for ambushing of prey.		This site does not contain the mosaic of vegetation types that this species favours. There is no evidence of permanent water, and due to the scarcity of this species and lack of local records, its occurrence is highly unlikely.	Unlikely	Unlikely
Falco hypoleucos	Grey Falcon	V	V	929	The Grey Falcon is a medium-sized, compact, pale falcon with a heavy, thick-set, deep-chested appearance. Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally		The site has very few watercourses present. In addition, there have been limited records of this species within the Rockhampton area. There is a low chance of occurrence on-site.	Low	Low

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					found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey. Preys primarily on birds, especially parrots and pigeons, using high-speed chases and stoops; reptiles and mammals are also taken. Like other falcons it utilises old nests of other birds of prey and ravens, usually high in a living eucalypt near water or a watercourse; peak laying season is in late winter and early spring; two or three eggs are laid. The nests chosen are usually in the tallest trees along watercourses, particularly River Red Gum (*Eucalyptus camaldulensis*) and Coolibah (*E. coolabah*).				
Geophaps scripta scripta	Squatter Pigeon (southern)	V	V	64440	This species inhabits open grasslands and woodlands typically with a native understorey although may occur in artificial pasture.		This site consists of patches of open grasslands and woodlands present. Native understory is generally lacking. There have been a number of recorded sightings of this species in close proximity to the site. There is potential for the species to occur on-site.	Moderate	Moderate
Hirundapus caudacutus	White-throated Needletail	V	V	682	Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open		The site consists mostly of wooded areas with patches of grasslands and highly modified extractive	Unlikely	Unlikely

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					forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. They also commonly occur over heathland, but less often over treeless areas, such as grassland or swamps.		industry. No heathland or rainforest areas are present on-site. In addition, there have been few recorded sightings in the vicinity of the site. Therefore, its occurrence is unlikely.		
Neochmia ruficauda ruficauda	Star Finch	E	-	26027	The Star Finch occurs mainly in grasslands and grassy woodlands that are located close to bodies of freshwater. It also occurs in cleared or suburban areas such as along roadsides and in towns		The site does not contain bodies of freshwater, with the exception of the quarry pit. While some patches of grassland are present the majority of the site is woodland. In addition, the species is very rarely recorded in the Rockhampton area. Thus, the species is not expected to occur on-site.	Unlikely	Unlikely
Ninox strenua	Powerful Owl	-	V	-	Found in open forests and woodlands, as well as along sheltered gullies in wet forests with dense understoreys, especially along watercourses. Will sometimes be found in open areas near forests such as farmland, parks and suburban areas, as well as in remnant bushland patches. Needs old growth trees to nest.		Preferred habitat in the form of wet forests with dense understoreys is not present and there is a lack of old growth hollow-bearing trees on-site reducing the likelihood that this species would utilise the vegetation on-site. There has been a single recording of the species within the conservation area adjacent to the site	Low	Low

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Numenius madagascariensis	Eastern Curlew	CE	E	847	The Eastern Curlew is most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. The birds are often recorded among saltmarsh and on mudflats fringed by mangroves, and sometimes use the mangroves. The birds are also found in saltworks and sewage farms.		No suitable habitat was observed throughout the assessment area.	Unlikely	Unlikely
Poephila cincta cincta	Southern Black-throated Finch	E	E	64447	The Black-throated Finch (southern) occurs mainly in grassy, open woodlands and forests, typically dominated by *Eucalyptus, Corymbia* and *Melaleuca*, and occasionally in tussock grasslands or other habitats (for example freshwater wetlands), often along or near watercourses, or in the vicinity of water. It occurs at two general locations: in the Townsville region, where it is considered to be locally common at a few sites around Townsville and Charters Towers; and at scattered sites in central-eastern Queensland (between Aramac and		Despite vegetation onsite containing *Eucalyptus* and *Corymbia* species, records of the Black-throated Finch are lacking in this locality and is therefore considered unlikely to occur on-site.	Unlikely	Unlikely

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					Great Basalt Wall National Park). It has been absent from Brisbane and its surrounds since the 1930s.				
Rostratula australis	Australian Painted-snipe	E	V	77037	The Australian Painted Snipe is usually found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled. The species has a scattered distribution throughout many parts of Australia, with a single record from Tasmania.		No suitable wetlands occur on-site. It is unlikely that this species will occur.	Unlikely	Unlikely
Turnix melanogaster	Black-breasted Button Quail	V	V	923	Typical habitat occurs in dry rainforest and vegetation immediately adjacent to rainforest. However, the species has also been recorded in a variety of low coastal heathlands around Fraser Island and nearby mainland. Deep leaf litter in which the species can forage appears to be particularly favoured.		The site does not contain dry rainforest or vegetation immediately adjacent to rainforest, and no heathlands are present. Deep leaf litter is also absent over the majority of the site. It is unlikely that this species will occur.	Unlikely	Unlikely
Mammals									
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	183	The Large-eared Pied Bat roosts on sandstone cliffs and fertile woodland valley habitat within close proximity of each other.		While the site consists of rocky terrain no cliffs or fertile vegetation was observed on site with few riparian corridors. There are very few records of this species as far	Unlikely	Unlikely

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		EPBC Act	NC Act						
							north as Rockhampton therefore its occurrence is considered unlikely.		
Dasyurus hallucatus	Northern Quoll	E	-	331	The Northern Quoll occupies a diversity of habitats across its range which includes rocky areas, eucalypt forests and woodlands, rainforests, sandy lowlands and beaches, shrubland, grassland and desert. Northern Quoll habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal. Eucalypt forest or woodland habitats usually have a high structural diversity containing large diameter trees, termite mounds or hollow logs for denning purposes. Dens are made in rock crevices, tree holes or occasionally termite mounds. Surveys in Queensland suggest that Northern Quolls are more likely to be present in high relief areas that have shallower soils, greater cover of boulders, less fire impact and were closer to permanent water.		The site consists of a significant amount of rocky areas with Eucalypt woodland present through much of the area. There has been a single recorded sighting of the species in close proximity to the site. However, field surveys identified a lack of large DBH and hollow-bearing Eucalypt species with low structural diversity on-site. Therefore, the likelihood of occurrence for this species is low.	Moderate	Low
Nyctophilus corbeni	Corben's Long-eared Bat	V	V	83395	In Queensland and New South Wales it inhabits a variety of vegetation types but it is distinctly more common in box /		While ironbark dominated vegetation is present on-site there are no records of this species as far	Unlikely	Unlikely

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					ironbark / cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of New South Wales and southern Queensland. In Victoria most records are from *Eucalyptus gracilis* mallee and black box woodlands while in South Australia it is confined to tall mallee shrublands.		north as Rockhampton. Therefore, its occurrence is considered unlikely.		
Petauroides volans	Greater Glider	V	V	254	The Greater Glider is an arboreal nocturnal marsupial that is mostly restricted to eucalypt forests and woodlands, although it occurs in highest abundance in taller, montane, moist eucalypt forests with abundant (large) hollow-bearing trees for shelter and a variety of eucalypt species for feeding. Diet consists of eucalypt leaves, and occasionally flowers. Small home ranges and low dispersibility make this species sensitive to clearing and fragmentation, with low persistence in small forest fragments.		There is a relatively limited variety of Eucalypt species over the site and not considered moist eucalypt forest. The majority of the trees on-site are small with very few hollow-bearing trees present. There have been 3 records of this species close to the site, however these are from 1998. No recent sightings have been recorded. Therefore, it's likelihood of occurrence on-site is low.	Moderate	Low
Phascolarctos cinereus	Koala	V	V	85104	The Koala is found in a range of habitats, from coastal islands and tall eucalypt forests to low woodlands inland.		Koala habitat is present on-site. However, there are limited recorded sightings within the vicinity of the site and no koalas were recorded	Moderate	Moderate

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							during field survey. However, the presence of habitat indicates that there is a moderate likelihood of occurrence on-site.		
Pteropus poliocephalus	Grey-headed Flying-fox	V	-	186	Species generally roosts in camps in trees adjacent to larger permanent watercourse. The Grey-headed flying fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feeds on commercial fruit crops. The primary food source is blossom from Eucalyptus and related genera.		While suitable foraging vegetation occurs on-site. There were no permanent water courses present. In addition, there was no observed roosts on site, with the nearest known roost site located near Kabra, approximately 6.5km to the north-east. Grey-headed Flying-foxes have not been recorded there since 2017. In addition, the Rockhampton area is within the northern most extent of their range. The likelihood of occurrence for this species is considered low	Low	Low
Plants									
Acacia attenuata		V	V	10690	*Acacia attenuata* inhabits flat, coastal lowland plains, at altitudes lower than 30m above sea level. It occurs in seasonally waterlogged areas of wet heathland or heathland margin open forest and woodland communities, on sandy poorly drained soils or infertile peat swamps.	wet heathland; peat swamp	No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely

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Acronychia littoralis	Scented Acronychia	E	E	8582	Scented Acronychia occurs in coastal areas (<2 km from the sea) in sub-littoral rainforest, usually in transitional zones between littoral rainforest and swamp sclerophyll forest, littoral and coastal cypress pine communities or on the margin of littoral forest and cleared land. Common associated tree species include Brush Box (*Lophostemon confertus*), Coast Banksia (*Banksia integrifolia*), Coast Cypress Pine (*Callitris columellaris*), Hoop Pine (*Araucaria cunninghamii*), Pink Bloodwood (*Eucalyptus intermedia*) and Broad-leaved Paperbark (*Melaleuca quinquenervia*). Scented Acronychia grows only on Quaternary geology, marine-aeolian sands on outer barrier Holocene dunes, inner barrier Pleistocene sands, alluvial benches of re-worked sand and alluvium close to river estuaries or low coastal hills mantled with wind-blown sand.	rainforest; quaternary; marine-aeolian sands; fringe habitat	No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Arthraxon hispidus	Hairy-joint Grass	V	V	9338	Hairy-joint grass is found in or on the edges of rainforest and in wet eucalypt forest, often near creeks or swamps, as well as woodland.	rainforest; swamp	No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely

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Bulbophyllum globuliforme	Hoop Pine Orchid	V		6649	The species is recorded from near Paluma, north-east Queensland and south to the McPherson Range on the Queensland/New South Wales border. The Hoop Pine Orchid is a host-specific species, only growing on the Hoop Pine, where it colonises the upper branches of mature trees	Hoop Pine	No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Cadellia pentastylis	Ooline	V	V	9828	Ooline occurs on the western edge of the NSW north-west slopes, from Mt Black Jack near Gunnadah to west of Tenterfield, and extends into Queensland to Carnarvon Range and Callide Valley, south-west of Rockhampton. Ooline grows in dry rainforest, semi-evergreen vine thickets and sclerophyll ecological communities, often locally dominant or as an emergent.	dry rainforest, semi-evergreen vine thickets and sclerophyll	No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Capparis humistrata	-		E		*Capparis humistrata* grows in eucalypt woodland with a shrubby understorey, on stony hard ridges and serpentinite soil. It also occurs on the margins of brigalow forest on sandy soil		The site includes a vegetation structure that would support this species. Four (4) records of the species have been shown as occurring in relatively close proximity to the site (2007). Therefore, there is a moderate likelihood of this species occurring within the site.	Moderate	Moderate

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Cossinia australiana	Cossinia	E	-	3066	Cossinia is known from fragmented relict patches of Araucarian vineforests or vine thickets on fertile soils in central and southern Queensland.		Vegetation to support this species was not observed on-site. In addition, no records of the species within proximity of the site have been submitted. It is therefore considered unlikely that this specie would occur on-site.	Unlikely	Unlikely
Cycas megacarpa		E	E	55794	*Cycas megacarpa* occurs in spotted gum (*Eucalyptus maculata*) and narrow-leaved ironbark (*Eucalyptus crebra*) woodland and open forest with a grassy understorey. It has also been recorded on rainforest margins. The species usually grows on hill tops and steep slopes. It is found on varying top soils; commonly sandy loams or shallow clay loams which are often stony		The site includes vegetation structure that supports this species. Field survey identified two (2) specimens of *Cycas megacarpa* adjacent to the site. The species was recorded outside of the survey area and additional 100m buffer.	High	High
Cycas ophiolitica		E	E	55797	*Cycas ophiolitica* grows on hills and slopes in sparse, grassy open forest at altitude ranges from 80–400 m above sea level. Although this species reaches its best development on red clay soils near Marlborough, it is more frequently found on shallow, stony, infertile soils, which are developed on sandstone and serpentinite, and is associated with species such as		The site includes vegetation structure that supports this species. Field survey identified two (2) specimens of *Cycas megacarpa* adjacent to the site. The species was recorded outside of the survey area and additional 100m buffer.	High	High

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					Corymbia dallachiana, C. erythrophloia, C. xanthope and *Eucalyptus fibrosa*. *Cycas ophiolitica* has also been found on mudstone in association with *Corymbia dallachiana, C. erythrophloia* and *Eucalyptus crebra*, and on alluvial loams with *Corymbia intermedia*, *Eucalyptus drepanophylla* and *E. tereticornis*.				
Dichanthium queenslandicum	Bluegrass	E	V	5481	King blue-grass is endemic to central and southern Queensland where it occurs in three disjunct populations: 1) Hughenden district (one record); 2) from Nebo to Monto and west to Clermont and Rolleston; and 3) Dalby district, Darling Downs. Little is known regarding habitat requirements of this species.		While habitat requirements aren't known for this species. They are present within three distinct locations with no known record of this species on or in close proximity to the site. The nearest record being near Emerald. It is considered unlikely that this species will occur on site.	Unlikely	Unlikely
Dichanthium setosum	Bluegrass	V	-	14159	In Queensland, bluegrass has been reported from the Leichhardt, Morton, North Kennedy and Port Curtis regions. *Dichanthium setosum* is associated with heavy basaltic black soils and stony red-brown hardsetting loam with clay. It can be found in moderately disturbed areas such as cleared woodland, grassy roadside remnants, grazed land and highly		There are no local records of this species within the Queensland Wildlife Online sightings data, with the closest sighting in the Emerald region. This species is unlikely to occur on-site due to lack of suitable conditions.	Unlikely	Unlikely

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					disturbed pasture. The extent to which this species tolerates disturbance is unknown.				
Eucalyptus raveretiana	Black Ironbox	V		16344	Black Ironbox usually grows along watercourses, and sometimes on river flats or open woodland. Black Ironbox does not occur in pure stands, but is co-dominant with species such as Broad-leaved Teatree (*Melaleuca leucadendra*), *M. fluviatilis*, Forest Red Gum (*Eucalyptus tereticornis*)		Suitable habitat for this species is not present within the site. A waterway that does provide suitable habitat is present adjacent to the northern boundary of the site. There have been no recent records of this species occurring within the proximity of the site. Therefore, it is considered unlikely that the species will occur on-site.	Unlikely	Unlikely
Graptophyllum excelsum		-	NT		*Graptophyllum excelsum* occurs in semi-evergreen vine thickets, although near Chillagoe the species has also been recorded growing in grassy woodland in association with *Eucalyptus cullenii* and *Corymbia erythrophloia*.		No suitable habitat to support this species is present on-site and no local sightings of this species have been recorded. It is unlikely this species will occur on-site.	Unlikely	Unlikely
Marsdenia brevifolia		V	-	64585	*Marsdenia brevifolia* has an apparent disjunct distribution in northern and central Queensland with collections having been made near Townsville, Springsure and north of Rockhampton. Around Springsure *M. brevifolia* has been collected from woodland dominated by *Corymbia erythrophloia* and *Eucalyptus*		Vegetation structure to support this species is present on-site. However, no local records of this species have been reported. Therefore, it is considered that the likelihood of this species occurring on-site is low.	Low	Low

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					crebra, with dense *Themeda triandra* understorey on basalt. Plants occurring north of Rockhampton grow on serpentine rock outcrops or on black crumbly soils derived from serpentine in woodland dominated by *Corymbia xanthope* and *Eucalyptus fibrosa*.				
Samadera bidwillii	Quassia	V	V	29708	Quassia commonly occurs in lowland rainforest or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland. Quassia is commonly found in areas adjacent to both temporary and permanent watercourses in locations up to 510 m altitude. The species occurs on lithosols, skeletal soils, loam soils, sands, silts and sands with clay subsoils.		This species favours lowland rainforest or rainforest margins which are absent from the site, and no local records exist, and thus Quassia is unlikely to be present on site.	Unlikely	Unlikely
Reptiles									
Delma torquata	Collared Delma	V	V	1656	In general, the species occurs on rocky hillsides on basalt and lateritic soils supporting open eucalypt and Acacia woodland with a sparse understorey of shrubs and tussocks or semi-evergreen vine thicket.		Rocky hill sides are present across the majority of the site with supporting open eucalypt woodland. However there have been no local records of the species. In addition, there were significant patches *of Lantana montevidensis* (Creeping Lantana) throughout the	Moderate	Low

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		EPBC Act	NC Act						
							site which is a common threat to the species. As such, the likelihood of occurrence for this species is low.		
Denisonia maculate	Ornamental Snake	V		1193	The Ornamental Snake's preferred habitat is within, or close to, habitat that is favoured by its prey - frogs. The species is known to prefer woodlands and open forests associated with moist areas, particularly gilgai (shallow depression) mounds and depressions in Queensland Regional Ecosystem Land Zone 4, but also lake margins and wetlands		There is limited habitat to support this species on-site. This species is considered unlikely to occur on-site	Unlikely	Unlikely
Egernia rugosa	Yakka Skink	V	V	1420	The Yakka Skink is found in open dry sclerophyll forest or woodland. This species will often take refuge among dense ground vegetation, large hollow logs, cavities in soil-bound root systems of fallen trees and beneath rocks. They may also excavate burrow systems among low vegetation or below logs	Fallen trees, rocks and logs	Habitat to support this species was present on-site consisting of rocks and fallen logs with hollows. However, there have been no local records of this species. Therefore, it is considered that the likelihood of occurrence is low.	Low	Low
Furina dunmalli	Dunmall's Snake	V	V	59254	Dunmall's Snake has been found in a broad range of habitats, including forests and woodlands on black alluvial cracking clay and clay loams dominated by Brigalow other Wattles, native Cypress or Bull-oak, and various Blue Spotted Gum,		Limited habitat to support this species is present on-site. Therefore, it is considered unlikely that this species will occur within the site.	Unlikely	Unlikely

Scientific name	Common name	Listing Status*		EPBC code	Habitat and Distribution	Microhabitat keywords	Likelihood of Occurrence Analysis	Desktop Likelihood of occurrence (on-site)	Field Survey Confirmed Likelihood of occurrence (on-site)
		EPBC Act	NC Act						
					Ironbark, White Cypress Pine and Bull oak open forest and woodland associations on sandstone derived soils. Dunmall's Snake occurs primarily in the Brigalow Belt region in the south-eastern interior of Queensland. Records indicate sites at elevations between 200–500 m above sea level. The snake is very rare or secretive with limited records existing. It has been recorded at Archokoora, Oakey, Miles, Glenmorgan, Wallaville, Gladstone, Lake Broadwater, Mount Archer, Exhibition Range National Park, roadside reserves between Inglewood and Texas, Rosedale, Yeppoon and Lake Broadwater Conservation Park.				
Rheodytes leukops	Fitzroy River Turtle	V		1761	The Fitzroy River Turtle is found in rivers with large deep pools with rocky, gravelly or sandy substrates, connected by shallow riffles. Preferred areas have high water clarity.	Rivers	No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely

**Status abbreviations are as follows: CE = Critically Endangered, E = Endangered, V = Vulnerable, NT = Near Threatened, C = Least Concern, SL = Special Least Concern, - = Not Listed.*

Listed migratory species (not listed above)

Scientific name	Common name	EPBC code	Habitat and Distribution	Microhabitat keywords	Likelihood of Occurrence Analysis	Desktop Likelihood of Occurrence (on-site)	Field Survey Confirmed Likelihood of Occurrence (on-site)
Migratory Marine birds							
Apus pacificus	Fork-tailed Swift	678	This species is almost exclusively aerial and mostly occur over inland plains but sometimes above foothills or in coastal areas.		No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Migratory Marine Species							
Crocodylus porosus	Salt-water Crocodile	1774	The Salt-water Crocodile mostly occurs in tidal rivers, coastal floodplains and channels, billabongs and swamps		No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Migratory terrestrial species							
Cuculus optatus	Oriental Cuckoo	86651	Non-breeding habitat only: monsoonal rainforest, vine thickets, wet sclerophyll forest or open Casuarina, Acacia or Eucalyptus woodlands. Frequently at edges or ecotones between habitat types		No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Hirundapus caudacutus	White-throated Needletail	682	The White-throated needle tail is almost exclusively aerial. This species has been recorded roosting in trees in forests and woodlands, both among dense foliage in the canopy or in hollows. The species breeds in wooded lowlands and sparsely vegetated hills, as well as mountains covered with coniferous forests.		Potential to occur on site within roosting periods.	Unlikely - May	Unlikely
Monarcha melanopsis	Black-faced Monarch	609	The Black-faced Monarch mainly occurs in rainforest ecosystems, including semi-deciduous vine thickets, complex notophyll vine forests,		No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely

Scientific name	Common name	EPBC code	Habitat and Distribution	Microhabitat keywords	Likelihood of Occurrence Analysis	Desktop Likelihood of Occurrence (on-site)	Field Survey Confirmed Likelihood of Occurrence (on-site)
			tropical (mesophyll) rainforest, subtropical (notophyll) rainforest, mesophyll (broadleaf) thicket/shrubland, warm temperate rainforest, dry (monsoon) rainforest and occasionally cool temperate rainforest.				
Monarcha trivirgatus	Spectacled Monarch	610	The Spectacled Monarchs natural habitats are subtropical or tropical moist lowland forests, subtropical or tropical mangrove forests, and subtropical or tropical moist montane forests. Its preference is for thick understorey areas.		No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Myiagra cyanoleuca	Satin Flycatcher	612	Satin Flycatchers inhabit heavily vegetated gullies in eucalypt dominated forests and taller woodlands, and on migration occur in coastal forests, woodlands, mangroves and drier woodlands and open forests.		No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Rhipidura rufifrons	Rufous Fantail	592	The Rufous fantail mainly inhabits wet sclerophyll forests, often in gullies dominated by Eucalypts such as *Eucalyptus microcorys*, *Eucalyptus pilularis*, *Eucalyptus resiniferia* and a number of other Eucalyptus species.		No suitable habitat to support this species occurs on-site.	Unlikely	Unlikely
Migratory wetland species							
Actitis hypoleucos	Common Sandpiper	59309	The Common Sandpiper utilises a wide range of coastal wetlands and some inland wetlands, including estuaries and deltas of streams, banks farther upstream; around lakes, pools, billabongs,		No suitable foraging or breeding habitat occurs on-site.	Unlikely	Unlikely

Scientific name	Common name	EPBC code	Habitat and Distribution	Microhabitat keywords	Likelihood of Occurrence Analysis	Desktop Likelihood of Occurrence (on-site)	Field Survey Confirmed Likelihood of Occurrence (on-site)
			reservoirs, dams and clay pans, and occasionally piers and jetties. They are mostly found in shallow water, around muddy margins or rocky shores and sometimes in muddy areas littered with rocks or snags. The species commonly utilises mangroves for foraging and roosting but is rarely seen on mudflats.				
Calidris acuminata	Sharp-tailed Sandpiper	874	In Australia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh, and beach cast algae / seaweed or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland. They also occur in salt works and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves.		No suitable foraging or breeding habitat occurs on-site.	Unlikely	Unlikely
Calidris ferruginea	Curlew Sandpiper						
Calidris melanotos	Pectoral Sandpiper	858	The Pectoral Sandpiper prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated		No suitable foraging or breeding habitat occurs on-site.	Unlikely	Unlikely

Scientific name	Common name	EPBC code	Habitat and Distribution	Microhabitat keywords	Likelihood of Occurrence Analysis	Desktop Likelihood of Occurrence (on-site)	Field Survey Confirmed Likelihood of Occurrence (on-site)
			grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. Occasionally found further inland.				
Gallinago hardwickii	Latham's Snipe	863	Latham's Snipe occurs in permanent and ephemeral wetlands. They usually inhabit open, freshwater wetlands with low, dense vegetation.		No suitable foraging or breeding habitat occurs on-site.	Unlikely	Unlikely
Numenius madagascariensis	Eastern Curlew	847	The Eastern Curlew is found on intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps and bays.		No suitable foraging or breeding habitat occurs on-site.	Unlikely	Unlikely
Pandion haliaetus	Osprey	952	Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers.		No suitable foraging or breeding habitat occurs on-site.	Unlikely	Unlikely

Appendix E

Microbat Call Identification Report

Microbat Call Identification Report

Prepared for ("Client"):	Saunders Havill Group
Survey location/project name:	Stanwell area, central-eastern Qld
Survey dates:	17-22 November 2020
Client project reference:	
Job no.:	SHG-2002
Report date:	17 December 2020

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Methods

Data received

Balance! Environmental received six raw ZCA data files recorded with an Anabat Express detector (Wildlife Acoustics, Brisbane) over six consecutive nights (17th-22nd November 2020). Metadata included in the dataset indicates that five separate sites were sampled, with the detector located at one site for the first two nights (17th & 18th November) and then moved to a new site each subsequent night (see **Figure 1**).

Call analysis and identification

The raw ZCA files were converted to multiple individual zero-crossing call sequence files (ZC files) using *Anabat Insight* (Version 1.9.7; Titley Scientific, Brisbane). A generic noise filter was applied during the conversion process to separate files containing only non-bat background noise from those with bat calls.

ZC files that passed the noise filter (*i.e.* contained bat calls) were then processed manually, with species identified by comparing call spectrograms and derived metrics with those of regionally relevant reference calls and published call descriptions (e.g. Reinhold *et al.* 2001). Where calls could not be attributed unequivocally to a single species (i.e. "unresolved calls"), they were assigned to multi-species groups. Species attribution was also guided by considering probability of occurrence based on published distributional information (Churchill 2008; van Dyck *et al.* 2013) and/or records held in Atlas of Living Australia (http://www.ala.org.au).

Reporting standard

The format and content of this report follows Australasian Bat Society standards for the interpretation and reporting of bat call data (Reardon 2003), available on-line at http://www.ausbats.org.au/.

Species nomenclature follows Jackson & Groves (2015).



Figure 1 Bat detector deployment locations by date, derived from Anabat metadata.

Results

The ZCA conversion process yielded 6415 ZC sequence files; however, 6265 of those files contained only non-bat background noise. A total of 152 individual bat calls were identified in the remaining 150 ZC files (see **Table 1**).

Almost 74% (111) of the calls were reliably identified to one of six species or the undifferentiated *Nyctophilus* genus (see top portion of **Table 1**). Two *Nyctophilus* species (*N. geoffroyi* and *N. gouldi*) potentially occur in the area.

The other 40 "unresolved" calls were assigned to three multi-species groups (see lower section of **Table 1**), one of which represented two species that were also positively identified from more definitive calls. The other two groups represented at least two and possibly three additional species. A single call detected on 21st November could have been from either *Chalinolobus nigrogriseus* or *Scotorepens greyii*. Another four calls probably belonged to *Ozimops ridei* but could also have been from *Chalinolobus gouldii*.

Example spectrograms for each identified species or group appear in **Appendix 1**.

Table 1 Bats recorded in the Redland Bay survey, 8-11 May 2020.
Number of calls allocated per species per night.

Night	17/11	18/11	19/11	20/11	21/11	22/11	Species Total
Positively identified calls							
Chalinolobus morio			1				1
Nyctophilus sp.			1	1			2
Scotorepens balstoni	1			1			2
Miniopterus australis		1		1	2	38	42
Miniopterus orianae					1	1	2
Chaerephon jobensis	1					26	27
Saccolaimus flaviventris	2	7	1	1	4	20	35
Unresolved calls							
Chalinolobus gouldii / Ozimops ridei	2		1		1		4
Chalinolobus nigrogriseus / Scotorepens greyii					1		1
C. jobensis / S. flaviventris	2				2	32	36
Detector-night total	8	8	4	4	11	117	152

References

Churchill, S. (2008). *Australian Bats*. Jacana Books, Allen & Unwin; Sydney.

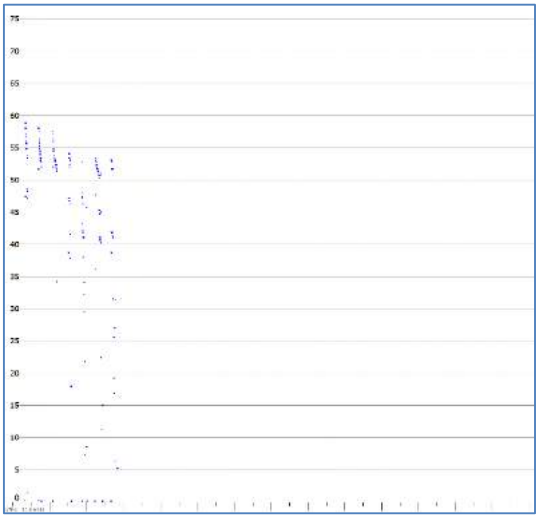
Jackson, S. and Groves, C. (2015). *Taxonomy of Australian Mammals*. CSIRO Publishing, Melbourne.

Reardon, T. (2003). Standards in bat detector based surveys. *Australasian Bat Society Newsletter* **20**, 41-43.

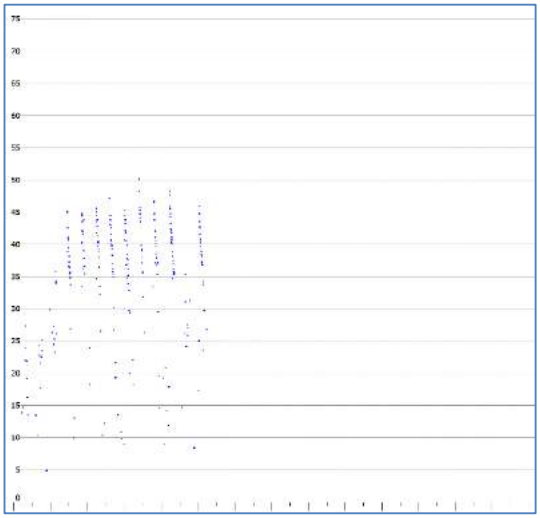
Reinhold, L., Law, B., Ford, G. and Pennay, M. (2001). *Key to the bat calls of south-east Queensland and north-east New South Wales*. Department of Natural Resources and Mines, Brisbane.

van Dyck, S., Gynther, I. and Baker, A. (ed.) (2013). Field Companion to the Mammals of Australia. New Holland; Sydney.

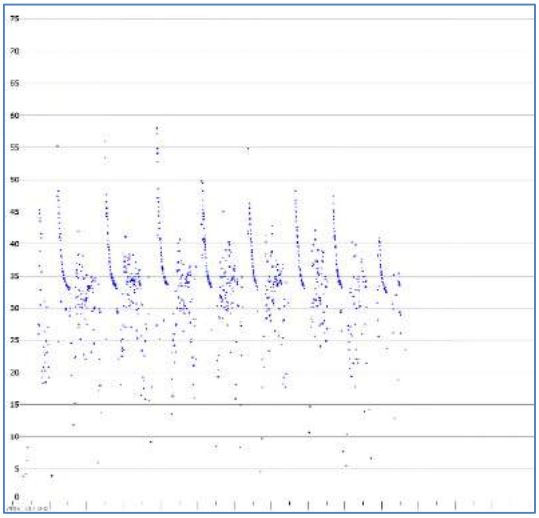
Appendix 1 Representative bat-calls recorded during the Stanwell survey, 17-22 November 2020. Timescale (*x*-axis) = 10ms per tick; time between pulses removed



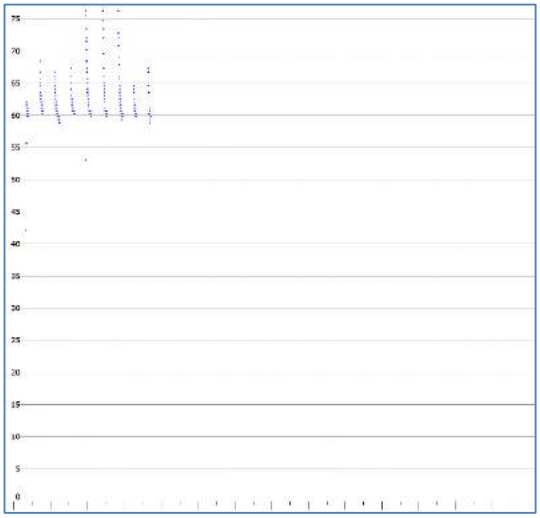
Chalinolobus morio



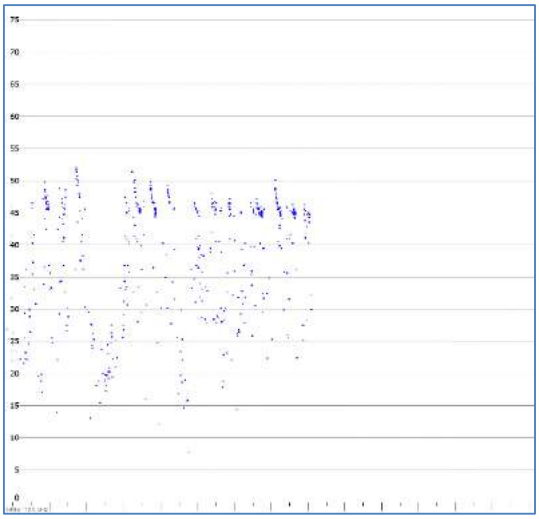
Nyctophilus sp.



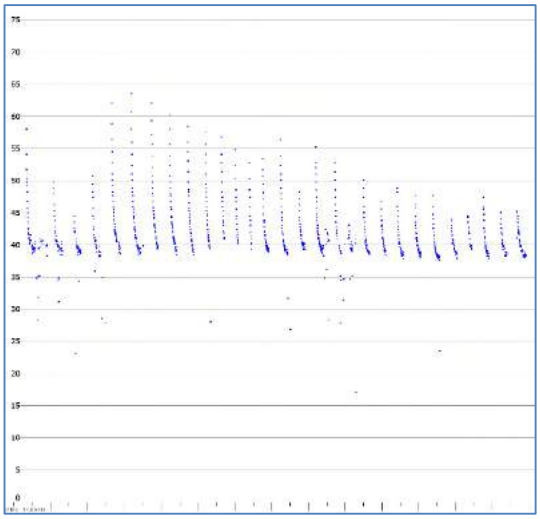
Scotorepens balstoni



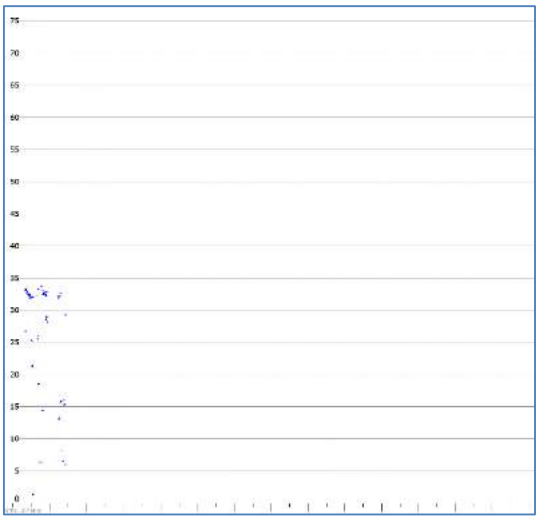
Miniopterus australis



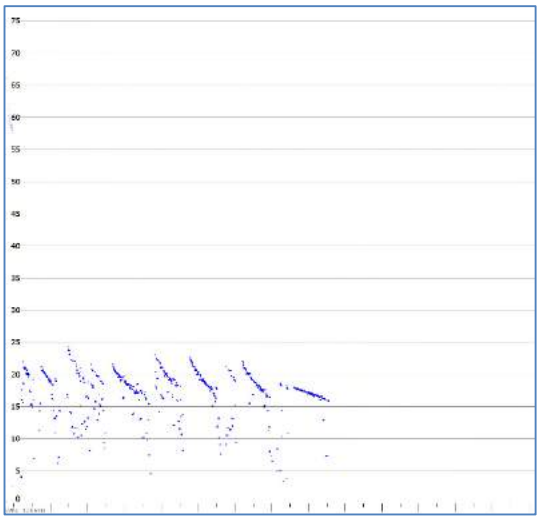
Miniopterus orianae



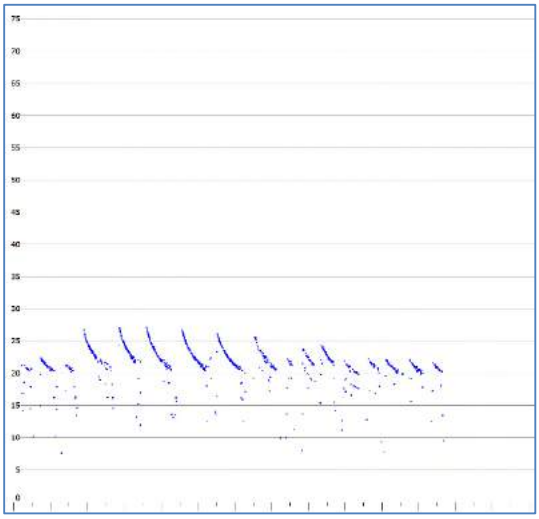
Chalinolobus nigrogriseus / Scotorepens greyii



Chalinolobus gouldii / Ozimops ridei



Chaerephon jobensis



Saccolaimus flaviventris

Appendix F

Biodiversity Overlay Code Response

Performance outcomes	Acceptable outcomes	Comments
For assessable development (part)		
Matters of local (general) environmental significance		
PO1 Development is located, designed and operated to retain and protect significant natural assets, habitat and values to the greatest extent possible. Where this is not possible, impacts are minimised by: 1. retaining native vegetation; 2. allowing for the regeneration of native vegetation to the area, or rehabilitating with locally endemic plants in non-vegetated areas of the site; 3. landscaping with locally native plants; 4. locating and designing public access to avoid disturbance of ecological values; 5. ensuring alterations to natural landforms, hydrology and drainage patterns do not significantly affect ecological values; and 6. incorporating measures that avoid the disruption of threatened wildlife and their habitat by allowing for their safe movement through the site. Note—In areas where environmental values have been mapped but are no longer present a report certified by an appropriately qualified person that the development site does not contain any matters of environmental significance will be required. Note—An environmental offset is provided for any permanent, irreversible loss or reduction in matters of local (high) environmental significance caused by the development. An environmental offset is carried out as per the requirements of the Queensland Government's Environmental Offsets Policy, as amended from time to time.	**AO1** No acceptable outcome is nominated.	The site is proposed to become a quarry for extractive purposes. This will require the removal of all native vegetation within the footprint to facilitate extraction. Where any native vegetation is not required to be removed within the footprint, it will be retained however, boundary fences will be required to be installed around the site, to prevent injury of fauna or unauthorised people. The site exists within a large proposed state biodiversity corridor, with mostly undeveloped land across its 10km-width, in the vicinity of the proposed quarry site. The site will remove a small patch of this proposed large-scale biodiversity corridor, allowing wildlife movement opportunities to remain intact north and south of the site, in addition to maintaining east-west connectivity. Waterways will not be directly impacted by the quarry with alteration of landform restricted to the proposed development footprint. To prevent injury and mortality to native fauna, exclusion fences will be erected around the site operations. This will functionally remove a small amount of habitat temporarily but habitat connectivity remains across remnant vegetation east-

Performance outcomes	Acceptable outcomes	Comments
		west and north-south of the site. No fragmentation will occur due to the expansion of quarry operations. Rehabilitation of native vegetation and landform is proposed at completion of extraction onsite in accordance with the Environmental Authority.
PO2 Development ensures native vegetation is retained, regenerated and rehabilitated in such a way as to: 1. ensure protection of areas of vegetation within biodiversity corridors and wildlife habitats; 2. maintain vegetation that is in patches of greatest size and smallest possible edge-to-area ratio; 3. maximise the linkages between vegetation located on the subject site; 4. maximise linkages between vegetation located on adjacent properties within the biodiversity network; 5. allow the dispersal or movement through biodiversity corridors; and 6. protect riparian vegetation in and adjacent to watercourses.	**AO2:** No acceptable outcome is nominated.	The site is proposed to become a quarry for extractive purposes. This will require the removal of all native vegetation within the footprint to facilitate extraction. Despite this, the site exists within a large proposed state biodiversity corridor, with mostly undeveloped land across its 10km-width, in the vicinity of the proposed quarry site. The site will remove a small patch of this proposed large-scale biodiversity corridor, allowing wildlife movement opportunities to remain intact north and south of the site, in addition to maintaining east-west connectivity. Waterways will not be directly impacted by the quarry with alteration of landform restricted to the proposed development footprint. No riparian vegetation or watercourses exist within the footprint. In addition, Condition 2G1 of the Environmental Authority specifies '*A minimum buffer distance of 50m must be maintained between stockpile areas and the high banks of any watercourse, lake or wetland.*' Where any native vegetation is not required to be removed within the footprint, it will be retained

Performance outcomes	Acceptable outcomes	Comments
		however, boundary fences will be required to be installed around the site, to prevent injury of fauna or unauthorised people. This will limit fauna movement through the site, but remnant vegetation connectivity remains to the west and east of the footprint, retaining fauna movement options. Rehabilitation of native vegetation and landform is proposed at completion of extraction onsite.
Matters of local (general) environmental significance		
PO3 Development minimises impacts on biodiversity values by ensuring they are retained to the greatest extent possible. Editor's note—minimising the impacts on biodiversity values can be achieved by: 1. retaining native vegetation; 2. allowing for the regeneration of native vegetation; 3. landscaping with native local plants; 4. locating and designing public access (for example roads, bushfire separation areas etcetera) to avoid disturbance of ecological values; 5. accommodating the safe movement of wildlife through the site; and 6. limiting alterations to natural landforms and avoiding disturbance to natural waterways and drainage paths.	**AO3:** No acceptable outcome is nominated.	The site is proposed to become a quarry for extractive purposes. This will require the removal of all native vegetation within the footprint to facilitate extraction. Where any native vegetation is not required to be removed within the footprint, it will be retained however, boundary fences will be required to be installed around the site, to prevent injury of fauna or unauthorised people. The site exists within a large proposed state biodiversity corridor, with mostly undeveloped land across its 10km-width, in the vicinity of the proposed quarry site. The site will remove a small patch of this proposed large-scale biodiversity corridor, allowing wildlife movement opportunities to remain intact north and south of the site, in addition to maintaining east-west connectivity.

Performance outcomes	Acceptable outcomes	Comments
		Waterways will not be directly impacted by the quarry with alteration of landform restricted to the 25.6ha footprint. Rehabilitation of native vegetation and landform is proposed at completion of extraction onsite.
Biodiversity corridors and wildlife habitats		
PO4 Development maintains unimpeded movement of terrestrial and aquatic fauna that are associated with or are likely to use the biodiversity corridor as part of their normal life cycle by: 1. ensuring development, including roads, pedestrian access and in-stream structures, do not create barriers to the movement of fauna (including fish passage) along or within biodiversity corridors; 2. providing effective wildlife movement infrastructure in accordance with best practice and directing fauna to locations where wildlife movement infrastructure has been provided to enable fauna to safely negotiate a development area; and 3. separating fauna from potential hazards through the use of appropriate fencing. Note—In areas where environmental values have been mapped but are no longer present a report certified by an appropriately qualified person that the development site does not contain any matters of environmental significance will be required.	**AO4** No acceptable outcome is nominated.	**Not applicable.** The site is not located within a Biodiversity Corridor under the RRP.

Performance outcomes	Acceptable outcomes	Comments
Editor's note—Biodiversity corridors have been mapped based on a minimum width of 500 metres.		
PO5 Development: 1. retains and protects areas of wildlife habitat that support a critical life stage ecological process such as feeding, breeding or roosting for identified species; and 2. incorporates measures as part of siting and design to protect and retain identified ecological values and underlying ecosystem processes within or adjacent to the development site.	**AO5** Development retains and protects native fauna feeding areas, nesting, breeding and roosting sites within the identified wildlife habitats. Editor's note—Development applications lodged with Council must identify all species listed that are present within or adjoining premises and habitats that may be affected by the proposal. In particular applications are to identify and describe how the development protects or enhances wildlife habitat at any critical life stage ecological processes within or adjacent to the development area. This should be reflected in an ecological assessment report prepared in accordance with the SC6.8 — Ecological assessment planning scheme policy.	**Not applicable.** Following full ecological assessment of the proposed development footprint, habitat specific to native fauna feeding areas, nesting, breeding and roosting sites were not identified as present. A full ecological assessment report has been developed for submission alongside this code response.

Performance outcomes	Acceptable outcomes	Comments
For assessable development		
Wetlands and waterways		
PO6 Development has no adverse impacts on: 1. native vegetation; 2. habitat; 3. ecological functions; 4. water quality; and 5. nature conservation values. Editor's note—Waterway buffers (aside from MSES-Waterways) have been mapped based on the following minimum widths: 1. fifty (50) metres buffer (twenty-five (25) metres either side of the waterway) for stream orders 1 and 2; 2. 100 metres (fifty (50) metres either side of the waterway) for stream orders 3 and 4; 3. 200 metres for stream order 5 and above, except for the Fitzroy River; and 4. for the Fitzroy River: 350 metres buffer (175 metres either side of the waterway) upstream of the Fitzroy River Barrage, and 450 metres (225 metres either side of the waterway) downstream of the Fitzroy River Barrage. Editor's note—Wetland buffers have a minimum width of:	**AO6** No acceptable outcome is nominated.	The proposed development footprint does not impact on wetlands or waterways mapped under the RRP.

Performance outcomes	Acceptable outcomes	Comments
1. fifty (50) metres buffer (twenty-five (25) metres either side of the waterway) in urban areas; and 2. 200 metres buffer (100 metres either side of the waterway) in non-urban areas. Editor's note—Vegetation clearing undertaken as a consequence of development occurs in compliance with the *Vegetation Management Act 1999* and *Nature Conservation Act 1992*.		
PO7 Development does not cause land degradation near a waterway or wetland, including: mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and a. loss or modification of chemical, physical or biological properties or functions of soil.	**AO7** Excavation and filling is not undertaken in waterways or wetlands.	The site is proposed as a quarry extension for extractive purposes. This will require the removal of all native vegetation within the footprint to facilitate extraction. In addition, the extraction process will involve excavation and alteration of landform during the lifespan of operations. However, the proposed extension will not impact on any wetlands or waterways mapped under either RRP, the Water Act 200 or the Fisheries Act 1994. Landform and vegetation will be rehabilitated following cessation of quarry extraction activities.

Performance outcomes	Acceptable outcomes	Comments
For assessable development		
Hydrology		
PO8 Development: 1. enhances or maintains the existing groundwater hydrological regime of all areas of environmental significance; and 2. ensures that the water table and hydrostatic pressure in the area of environmental significance is returning to its natural state.	**AO8** No acceptable outcome is nominated.	
Non-native pest management		
PO9 Development avoids the introduction of non-native pest species (plant or animal) that pose a risk to ecological integrity.	**AO9.1** Development does not introduce non-native pest species.	The development will involve installation of exclusion fences to prevent accidental injury to animals and unauthorized people. The exclusion fencing should minimise access to non-native pest species, preventing an increase in prevalence at the site. The quarry has been operational since 2002, with minimal spread of weeds at the site. All weed prevention procedures required of accessing the quarry and the adjacent nature reserve (through which the quarry is accessed) will be adhered to, maintaining the current practices associated with weed prevention.
Ongoing management, construction and operation		

Performance outcomes	Acceptable outcomes	Comments
PO10 During construction and operation of development, ongoing management, monitoring and maintenance is undertaken to ensure impacts on environmentally significant areas, biodiversity values and ecological processes, including water quality and hydrology, are avoided or minimised. Editor's note—Construction and operation related to a development are carried out in accordance with an operational management plan where appropriate. This plan can form an amendment to an existing approved management plan for the site.	No acceptable outcome is nominated.	Monitoring and regular maintenance is a requirement during quarry operations under the Environmental Authority and will be undertaken in accordance with current approvals.
PO12 Management arrangements facilitate the effective conservation and protection of matters of national, state or local environmental significance, ecological processes and biodiversity values.	**AO12.1** Areas supporting matters of national, state or local significance features, biodiversity values or ecological processes are: a) transferred into public ownership where the land is required for public access or for some other public purpose consistent with its ecological, open space or recreation functions, including: 1. access for maintenance; 2. linking core and remnant habitat areas;	Quarry procedures will allow for any required management of species or communities of conservation significance if required. Advance notice from the monitoring authority will be required in order to allow safe access for the parties involved.

Performance outcomes	Acceptable outcomes	Comments
	3. protecting water quality and ecological processes; and 4. other public benefit; or b) incorporated within private open space and included within a voluntary statutory covenant that is registered under the *Land Title Act 1994*. Editor's note—Matters of national, state or local environmental significance include all areas shown on all biodiversity overlay maps.	
Rehabilitation		
PO13 Areas degraded as a result of development are rehabilitated by the proponent as near as is practical to the naturally occurring suite of native plant species and ecological communities. Editor's note—A rehabilitation plan supported by expert ecological advice prepared in accordance with SC6.8 — Ecological assessment planning scheme policy as well as reference to SC6.12 — Landscape design and street trees planning scheme policy will assist in demonstrating achievement of this performance outcome.	No acceptable outcome is nominated.	Following cessation of operations within each area of the quarry, landform and vegetation communities will be rehabilitated to restore regional ecosystems which naturally occur onsite.

State code 6: Protection of state transport networks

Table 6.2.2: All development

Performance outcomes	Acceptable outcomes	Response
Network impacts		
PO1 Development does not result in a worsening of the safety of a state-controlled road. Note: To demonstrate compliance with this performance outcome, it is recommended that a Registered Professional Engineer of Queensland (RPEQ) certified road safety audit or road safety assessment (as applicable) is provided. Further information on determining whether a road safety audit or road safety assessment is required is provided in section 9 of the Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017.	No acceptable outcome is prescribed.	**Complies with PO1** A safety assessment has been undertaken by McMurtrie Consulting Engineers ('MCE'). The results of the safety analysis concluded that is not expected that any specific road safety risks are present along the proposed haulage route that would greatly impact on the traffic movements associated with the proposed Stanwell Quarry haulage operation. (refer **Attachment 8 – Traffic Impact Assessment**).
PO2 Development does not result in a worsening of the infrastructure condition of a state-controlled road or road transport infrastructure. Note: To demonstrate compliance with this performance outcome, it is recommended that a RPEQ certified traffic impact assessment and pavement impact assessment are provided. Further information on how to prepare a traffic impact assessment and pavement impact assessment is provided in the Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017.	No acceptable outcome is prescribed.	**Complies with PO2** A pavement impact assessment has been undertaken by MCE and is included as Section 5.4 of the Traffic Impact Assessment ('TIA') (refer **Attachment 8 – Traffic Impact Assessment**).
PO3 Development does not result in a worsening of operating conditions on a state-controlled road or the surrounding road network. Note: To demonstrate compliance with this performance outcome, it is recommended that an RPEQ certified traffic impact assessment is provided. Further information on how to prepare a traffic impact assessment is provided in the Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017.	No acceptable outcome is prescribed.	**Complies with PO3** Whilst the proposal will also utilise the Capricorn Highway, the resultant traffic generation of the proposed operation does not exceed the 5% threshold specified in DTMR's GTIA. Therefore, a detailed assessment of the impacts to the state-controlled road network is not considered to be warranted (refer **Attachment 8 – Traffic Impact Assessment**).

Performance outcomes	Acceptable outcomes	Response
PO4 Development does not impose traffic loadings on a state-controlled road which could be accommodated on the local road network.	**AO4.1** The layout and design of the development directs traffic generated by the development to the local road network.	**Complies with AO4.1** The site directs traffic generated by the Stanwell Quarry onto Power Station Road.
PO5 Upgrade works on, or associated with, a state-controlled road are built in accordance with relevant design standards.	**AO5.1** Upgrade works on a state-controlled road are designed and constructed in accordance with the Road Planning and Design Manual, 2nd edition, Department of Transport and Main Roads, 2016.	**Not Applicable** No upgrade works to a state-controlled road are proposed.
PO6 Development involving the haulage of fill, extracted material or excavated spoil material exceeding 10,000 tonnes per year does not damage the pavement of a state-controlled road. Note: It is recommended that a transport infrastructure impact assessment and pavement impact assessment are provided. Further information on how to prepare a traffic impact assessment is provided in the Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017.	**AO6.1** Fill, extracted material and spoil material is not transported to or from the development site on a state-controlled road.	**Complies with PO6** A pavement impact assessment has been undertaken by MCE and is included as Section 5.4 of the TIA (refer **Attachment 8 – Traffic Impact Assessment**).
PO7 Development does not adversely impact on the safety of a railway crossing. Note: It is recommended that a traffic impact assessment be prepared to demonstrate compliance with this performance outcome. An impact on a level crossing may require an Australian Level Crossing Assessment Model (ALCAM) assessment to be undertaken. Section 2.2 – Railway crossing safety of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this performance outcome.	**AO7.1** Development does not require a new railway crossing. OR	**Complies with AO7.1** The proposed development does not require a new railway crossing.
	AO7.2 A new railway crossing is grade separated. OR all of the following acceptable outcomes apply:	
	AO7.3 Upgrades to a level crossing are designed and constructed in accordance with AS1742.7 – Manual of uniform traffic control devices, Part 7: Railway crossings and applicable rail manager standard drawings. Note: It is recommended a traffic impact assessment be prepared to demonstrate compliance with this acceptable outcome. An impact on a level crossing may require an Australian Level Crossing Assessment Model (ALCAM) assessment to be undertaken. Section 2.2 – Railway crossing safety of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this acceptable outcome AND	

Performance outcomes	Acceptable outcomes	Response
	AO7.4 Access points achieve sufficient clearance from a level crossing in accordance with AS1742.7 – Manual of uniform traffic control devices, Part 7: Railway crossings by providing a minimum clearance of 5 metres from the edge running rail (outer rail) plus the length of the largest vehicle anticipated on-site. Note: Section 2.2 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this acceptable outcome. AND	
	AO7.5 On-site vehicle circulation is designed to give priority to entering vehicles at all times.	
PO8 Development does not result in a worsening of the infrastructure condition of a railway or rail transport infrastructure.	No acceptable outcome is prescribed.	**Complies with PO8** The proposed development will not result in a worsening of the infrastructure conditions or operation of a railway of rail transport infrastructure.
PO9 Development does not result in a worsening of operating conditions of a railway	No acceptable outcome is prescribed.	**Complies with PO9** Refer to response PO8 above.
Stormwater and drainage		
PO10 Development does not result in an actionable nuisance, or worsening of, stormwater, flooding or drainage impacts in a state transport corridor or state transport infrastructure.	No acceptable outcome is prescribed.	**Complies with PO10** The proposed development is not located near any state transport corridors or state transport infrastructure (approximately 3.7 kilometres). As such, the proposed development is not anticipated to result in an actionable nuisance, or worsening of stormwater, flooding or drainage impacts.
PO11 Run-off from the development site is not unlawfully discharged to a state transport corridor or state transport infrastructure.	**AO11.1** Development does not create any new points of discharge to a state transport corridor. AND	**Complies with AO11.1** No new points of discharge to a state transport corridor are proposed. The proposed development is not located near any state transport corridors or state transport infrastructure (approximately 3.7 kilometres).
	AO11.2 Stormwater run-off is discharged to a lawful point of discharge. Note: Section 3.49 of the Queensland Urban Drainage Manual,	**Complies with AO11.2** Stormwater will continue to be discharged to a lawful point of discharge (refer **Attachment 7 – Site Based Management Plan**).

Performance outcomes	Acceptable outcomes	Response
	Institute of Public Works Engineering Australasia (Queensland Division) Fourth Edition, 2016, provides further information on lawful points of discharge. AND	
	AO11.3 Development does not worsen the condition of an existing lawful point of discharge to a state transport corridor.	**Complies with AO11.3** Refer to response PO10 above.
PO12 Run-off from the development site does not cause siltation of stormwater infrastructure affecting a state transport corridor or state transport infrastructure.	**AO12.1** Run-off from the development site is not discharged to stormwater infrastructure for a state transport corridor.	**Complies with AO11.4** Refer to response PO10 above.
Planned upgrades		
PO13 Development does not impede delivery of planned upgrades of state transport infrastructure.	**AO13.1** Development is not located on land identified by the Department of Transport and Main Roads as land required for the planned upgrade of state transport infrastructure. Note: Land required for the planned upgrade of state transport infrastructure is identified in the DA mapping system. OR	**Complies with AO13.1** The site is not located on land identified as being required for planned upgrades of state transport infrastructure.
	AO13.2 Development is sited and designed so that permanent buildings, structures, infrastructure, services or utilities are not located on land identified by the Department of Transport and Main Roads as land required for the planned upgrade of state transport infrastructure.	
	OR all of the following acceptable outcomes apply: **AO13.3** Structures and infrastructure located on land identified by the Department of Transport and Main Roads as land required for the planned upgrade of state transport infrastructure are able to be readily relocated or removed without materially affecting the viability or functionality of the development.	

Performance outcomes	Acceptable outcomes	Response
	AND	
	AO13.4 Vehicular access for the development is consistent with the function and design of the planned upgrade of state transport infrastructure. AND	
	AO13.5 Development does not involve filling and excavation of, or material changes to, land required for a planned upgrade to a state transport infrastructure. AND	
	AO13.6 Land is able to be reinstated to the predevelopment condition at the completion of the use.	

Table 6.2.3: Public passenger transport infrastructure

Performance outcomes	Acceptable outcomes	Response
Public passenger transport infrastructure		
PO14 Development does not damage or interfere with public passenger transport infrastructure, public passenger services or pedestrian or cycle access to public passenger transport infrastructure and public passenger services.	**AO14.1** Vehicular access and associated road access works are not located within 5 metres of public passenger transport infrastructure. AND	**Complies with AO14.1** The site is not located near any public passenger transport infrastructure.
	AO14.2 Development does not necessitate the relocation of existing public passenger transport infrastructure. AND	**Complies with AO14.2** The proposed development does not necessitate the relocation of existing public passenger transport.
	AO14.3 Development does not obstruct pedestrian or cyclist access to public passenger transport infrastructure or public passenger services. AND	**Complies with AO14.3** Refer to response AO14.1 above.
	AO14.4 The normal operation of public passenger	**Complies with AO14.4** Refer to response AO14.1 above.

Performance outcomes	Acceptable outcomes	Response
	transport infrastructure or public passenger services is not interrupted during construction of the development.	
PO15 Upgraded or new public passenger transport infrastructure is provided to accommodate the demand for public passenger transport generated by the development. Note: To demonstrate compliance with this performance outcome, it is recommended a public transport impact assessment be prepared in accordance with appendix 1 of the State Development Assessment Provisions Supporting Information – Public Passenger Transport Infrastructure, Department of Transport and Main Roads, 2017. New or upgraded public passenger transport infrastructure provided should be in accordance with the Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015. Refer to the SDAP Supporting Information: Public passenger transport infrastructure, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcome.	No acceptable outcome is prescribed.	**Not Applicable** The Stanwell Quarry does not generate any demand for public passenger transport.
PO16 Development is designed to ensure the location of public passenger transport infrastructure prioritises and enables efficient public passenger services. Note: Chapters 2 and 5 of the Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015 provides guidance on how to comply with this performance outcome. Refer to the SDAP Supporting Information: Public passenger transport infrastructure, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcome.	No acceptable outcome is prescribed.	**Not Applicable** No public passenger transport is proposed.

Performance outcomes	Acceptable outcomes	Response
PO17 Development enables the provision or extension of public passenger services to the development and avoids creating indirect or inefficient routes for public passenger services. Note: Refer to the SDAP Supporting Information: Public passenger transport infrastructure, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcome.	No acceptable outcome is prescribed.	**Not Applicable** The Stanwell Quarry will not generate any demand for public passenger transport and there is no public passenger transport near the site.
PO18 New or modified road networks are designed to enable development to be serviced by public passenger services. Note: Refer to the SDAP Supporting Information: Public passenger transport infrastructure, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcome.	**AO18.1** Roads catering for buses are arterial or sub-arterial roads, collector or their equivalent. AND	**Not Applicable** No new or modified roads are proposed.
	AO18.2 Roads intended to accommodate buses are designed and constructed in accordance with parts 3, 4-4C and 6 of the Road Planning and Design Manual 2nd edition, Volume 3: Guide to Road Design, Department of Transport and Main Roads, 2016 and Part 13 of the Manual of Uniform Traffic Control Devices, Department of Transport and Main Roads, 2018. Note: Parts 3, 4-4C and 6 of the Road Planning and Design Manual, Volume 3: Guide to Road Design, Department of Transport and Main Roads, 2016, must be read in conjunction with the following standards where specified in the Manual: 1. Supplement to Austroads Guide to Road Design (Parts 3,4-4C and 6), Department of Transport and Main Roads, 2014, and 2. Austroads Guide to Road Design (Parts 3,4-4C and 6). AND	**Not Applicable** Refer to response AO18.1 above.
	AO18.3 Traffic calming devices are not installed on roads used for buses. Note: Chapter 2 of the Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015 provides guidance on how to comply with this acceptable outcome.	**Not Applicable** Refer to response AO18.1 above.

Performance outcomes	Acceptable outcomes	Response
PO19 Development provides safe, direct and convenient pedestrian access to existing and future public passenger transport infrastructure. Note: Chapter 3 of the Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015 provides guidance on how to comply with this performance outcome. In particular, it is recommended that a pedestrian demand analysis be provided to demonstrate compliance with the performance outcome. Refer to the SDAP Supporting Information: Public passenger transport infrastructure, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcome.	No acceptable outcome is prescribed.	**Not Applicable** Refer to response PO17 above.
PO20 On-site vehicular circulation ensures the safety of both public passenger transport services and pedestrians. Note: Refer to the SDAP Supporting Information: Public passenger transport infrastructure, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcome.	**AO20.1** The location of on-site pedestrian crossings ensures safe sight distances for pedestrians and public passenger services. AND	**Not Applicable** No public passenger services access the site.
	AO20.2 On-site circulation is designed and constructed so that public passenger services can enter and leave in a forward gear at all times. AND	**Not Applicable** Refer to response AO20.1 above.
	AO20.3 Development does not result in public passenger services movements through car parking aisles.	**Not Applicable** Refer to response AO20.1 above.
PO21 Taxi facilities are provided to accommodate the demand generated by the development. Note: Guidance on how to meet the performance outcome are available in chapter 7 of the Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015. Refer to the SDAP Supporting Information: Public passenger transport infrastructure, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcome.	No acceptable outcome is prescribed.	**Not Applicable** The proposed operation will not generate any demand for taxi facilities.
PO22 Taxi facilities are located and designed to provide convenient, safe and equitable access for passengers.	**AO22.1** A taxi facility is provided parallel to the kerb and adjacent to the main entrance. AND	**Not Applicable** No taxi facilities are proposed.

Performance outcomes	Acceptable outcomes	Response
Note: Refer to the SDAP Supporting Information: Public passenger transport infrastructure, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcome.	**AO22.2** Taxi facilities are designed in accordance with: 1. AS2890.5–1993 Parking facilities – on-street parking and AS1428.1–2009 Design for access and mobility – general requirements for access – new building work 2. AS1742.11–1999 Parking controls – manual of uniform traffic control devices 3. AS/NZS 2890.6–2009 Parking facilities – offstreet parking for people with disabilities 4. Disability standards for accessible public transport 2002 made under section 31(1) of the *Disability Discrimination Act 1992* 5. AS/NZS 1158.3.1 – Lighting for roads and public spaces, Part 3.1: Pedestrian area (category P) lighting – Performance and design requirements.	**Not Applicable** Refer to response AO22.1 above.
PO23 Educational establishments are designed to ensure the safe and efficient operation of public passenger services and pedestrian access. Note: Refer to the SDAP Supporting Information: Public passenger transport infrastructure, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcome.	**AO23.1** Educational establishments are designed in accordance with the provisions of the Planning for Safe Transport Infrastructure at Schools, Department of Transport and Main Roads, 2011.	**Not Applicable** No educational establishments are proposed.

State code 22: Environmentally relevant activities

Table 22.2.2: Material change of use

Performance outcomes	Acceptable outcomes	Response
All ERAs		
PO1 Development is suitably located and designed to avoid or mitigate environmental harm to the acoustic environment.	**AO1.1** Development meets the acoustic quality objectives for sensitive receptors identified in the Environmental Protection (Noise) Policy 2019.	**Complies with AO1.1** An Environmental Assessment Report ('EAR') has been prepared to support the application in accordance with Section 125 of the *Environmental Protection Act 1994* (refer **Attachment 13 – Environmental Assessment Report**). The EAR confirms that provided Holcim implement control measures for potential impacts for noise as outlined in the Site Based Management Plan ('SBMP') (Section 4.4 contains the Noise Management Plan), and observe Environmental Authority ('EA') requirements, the environmental objectives for acoustic quality identified in the *Environmental Protection (Noise) Policy 2019* will likely be achieved (refer **Attachment 7 – Site Based Management Plan**).
PO2 Development is suitably located and designed to avoid or mitigate environmental harm to the air environment.	**AO2.1** Development meets the air quality objectives of the Environmental Protection (Air) Policy 2019.	**Complies with AO2.1** An EAR has been prepared to support the application in accordance with Section 125 of the *Environmental Protection Act 1994* (refer **Attachment 13 – Environmental Assessment Report**). The EAR confirms that provided Holcim implement control measures for potential impacts for air quality as outlined in the SBMP (Section 4.1 contains the Air Quality Management Plan), and observe EA requirements, the environmental objectives for acoustic quality identified in the *Environmental Protection (Air) Policy 2019* will likely be achieved (refer **Attachment 7 – Site Based Management Plan**).
PO3 Development, other than intensive animal industry for poultry farming, is suitably located and	No acceptable outcome is prescribed.	**Complies with PO3**

Performance outcomes	Acceptable outcomes	Response
designed to avoid or mitigate environmental harm on adjacent sensitive land uses caused by odour.		The proposed development will not generate odour emissions.
PO4 Development is suitably located and designed to avoid or mitigate environmental harm to the receiving waters environment.	**AO4.1** Development meets the management intent, water quality guidelines and objectives of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019.	**Complies with AO4.1** A Water Quality Management Plan has been prepared for the quarry operation to demonstrate compliance with the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (refer Section 4.2 of **Attachment 7 – Site Based Management Plan**). An EAR has been prepared to support the application in accordance with Section 125 of the *Environmental Protection Act 1994* (refer **Attachment 13 – Environmental Assessment Report**). The EAR confirms that provided the management measures outlined in the SMP and SBMP are implemented, and the EA conditions are complied with, the environmental objectives for water are likely to be achieved.
PO5 Development is designed to include elements which: 1. prevent or minimise the production of hazardous contaminants and waste as by-products; or 2. contain and treat hazardous contaminants on-site rather than releasing them into the environment; and 3. provide secondary containment to prevent the accidental release of hazardous contaminants to the environment from spillage or leaks.	No acceptable outcome is prescribed.	**Complies with PO5** The proposal does not involve the production of hazardous chemicals or waste.
PO6 Environmentally hazardous materials located on site are stored to avoid or minimise their release into the environment due to inundation during flood events.	No acceptable outcome is prescribed.	**Complies with PO6** Minor quantities of oils and lubricants will continue to be stored in a bunded area of the workshop.
All development – matters of environmental significance		
PO7 Development: 1. avoids impacts on matters of state environmental significance; or	No acceptable outcome is prescribed.	Refer to **Attachment 12 –State Code 22 Response** prepared by Saunders Havill Group.

Performance outcomes	Acceptable outcomes	Response
2. minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and 3. provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance. Statutory note: For Brisbane core port land, an offset may only be applied to development on land identified as E1 Conservation/Buffer, E2 Open Space or Buffer/Investigation in the Brisbane Port LUP precinct plan. For the Brisbane Port LUP, see www.portbris.com.au. Note: Guidance for determining if the development will have a significant residual impact on a matter of state environmental significance is provided in the Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, 2014. Where the significant residual impact is considered an acceptable impact on the matter of state environmental significance and an offset is considered appropriate, the offset should be delivered in accordance with the *Environmental Offsets Act 2014*.		
Category C areas and category R areas of vegetation		
PO8 Development: 1. avoids impacts on category C areas of vegetation and category R areas of vegetation; or 2. minimises and mitigates impacts on category C areas and category R areas of vegetation after demonstrating avoidance is not reasonably possible.	No acceptable outcome is prescribed.	Refer to **Attachment 12 – State Code 22 Response** prepared by Saunders Havill Group.
Intensive animal industry – poultry farming (ERA 4(2))		
PO9 Poultry farming development (where farming more than 200,000 birds) is suitably located and designed to avoid or mitigate environmental harm on adjacent sensitive land uses caused by odour.	**AO9.1** For poultry farming involving 300,000 birds or less, development meets the separation distances as determined using the S-factor methodology to: 1. a sensitive land use in a rural zone; and	**Not Applicable** No intensive animal industry – poultry farming is proposed.

Performance outcomes	Acceptable outcomes	Response
	2. boundary of a non-rural zone. OR	
	AO9.2 Development meets the separation distances as determined by odour modelling using the following criteria: 1. 2.5 odour units, 99.5 percent, 1 hour average for a sensitive land use in a rural zone; or 2. 1.0 odour units, 99.5 percent, 1 hour average for the boundary of a non-rural zone. Statutory note: Guidance for determining if the development will cause environmental harm caused by odour is provided in the Development of Meat Chicken Farms in Queensland, Department of Agriculture and Fisheries, 2016 and the Guideline – Odour Impact Assessment from Developments, Department of Environment and Heritage Protection, 2013.	



State Code 16 (Version 2.5) Response

Stanwell Quarry Extension
Prepared for Amcor Quarries Pty Ltd
25 March 2021

Job 10314 E

saunders havill group

Document Control

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1. Introduction

Saunders Havill Group was engaged by AMCOR Quarries and Concrete Pty Ltd to prepare a response to the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) State Assessment and Referral Agency's (SARA) State Development Assessment Provisions (SDAP) Version 2.5 *State Code 16: Native Vegetation Clearing*. This response is intended to support a development application to Rockhampton Regional Council (RRC) involving a Development Permit for a Material Change of Use (MCU) and Operational Works (Vegetation Clearing).

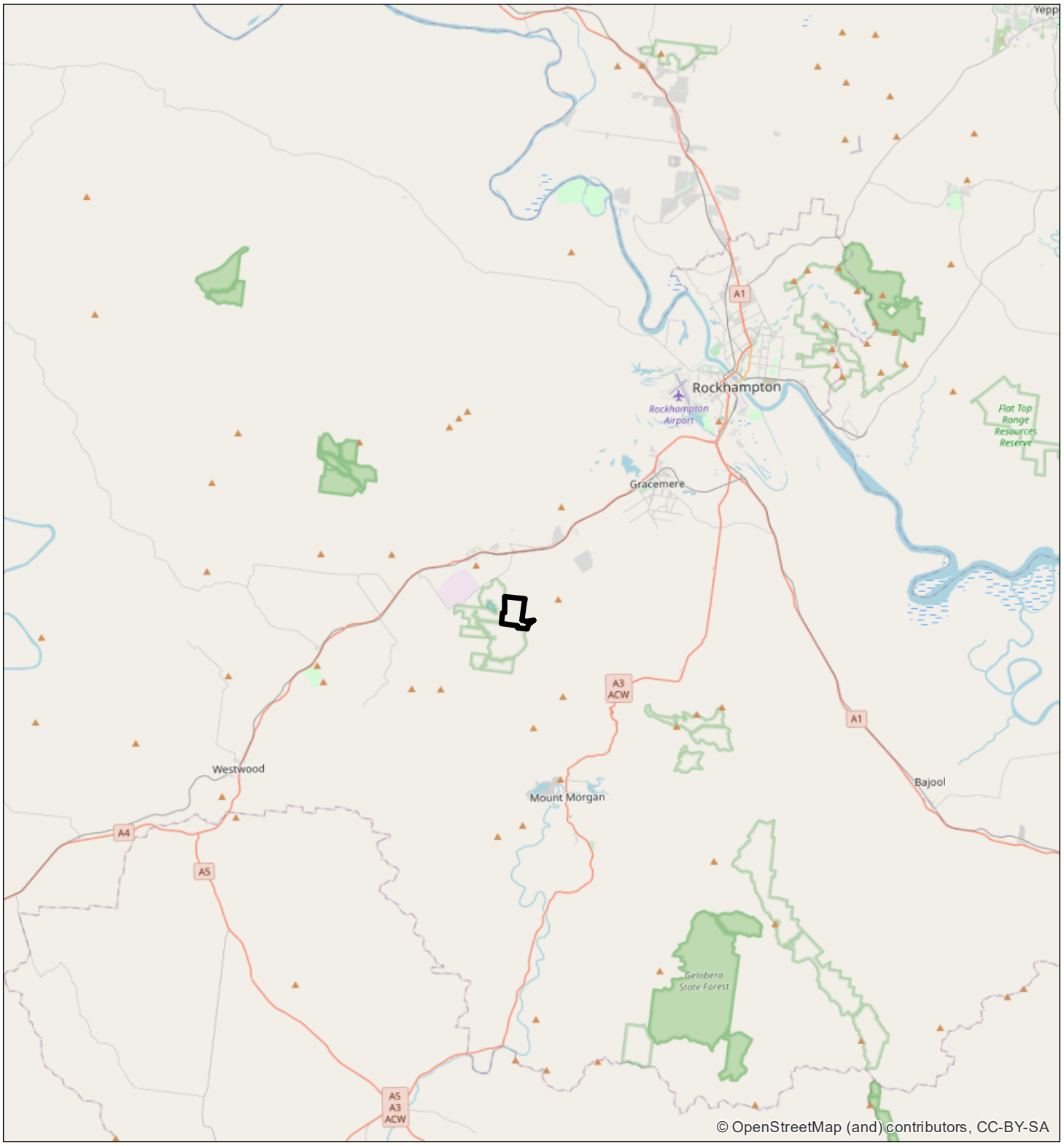
The site is located at 294 Hume Rd, Kabra, described as part of Lot 1 on RP616642, with a total impact area of 25.6 hectares (ha). The site context and aerial are shown **Figure 1** and **Figure 2**, respectively.

1.1. Key Site Details

Key details of the property are provided in **Table 1**.

Table 1: Property summary

Address	294 Hume Road, Kabra
Size	Approx. 25.6 ha (proposed clearing area)
Lots	Part of Lot 1 on RP616642
VM Act 1999	Category B - Remnant (Least concern, RE11.11.15/11.11.3/11.11.5) Category X - Non-remnant
MSES	Wildlife habitat (endangered or vulnerable) Regulated vegetation (essential habitat)
Koala Habitat	Outside of Koala Priority Area No Koala Habitat Area mapped on-site
LGA	Rockhampton Regional Council
Planning scheme / local plan	Rockhampton Regional Planning Scheme
Environmental overlays	MLES – General MSES – Wildlife habitat Waterways



Legend

Site DCDB

Figure 1

Site Context

AMCOR Quarries

File ref. 10314 E Figure 1 Site Context A_
Date *11/12/2020*
Project *Hume Road, Kabra*

0 5 10 20 *km*

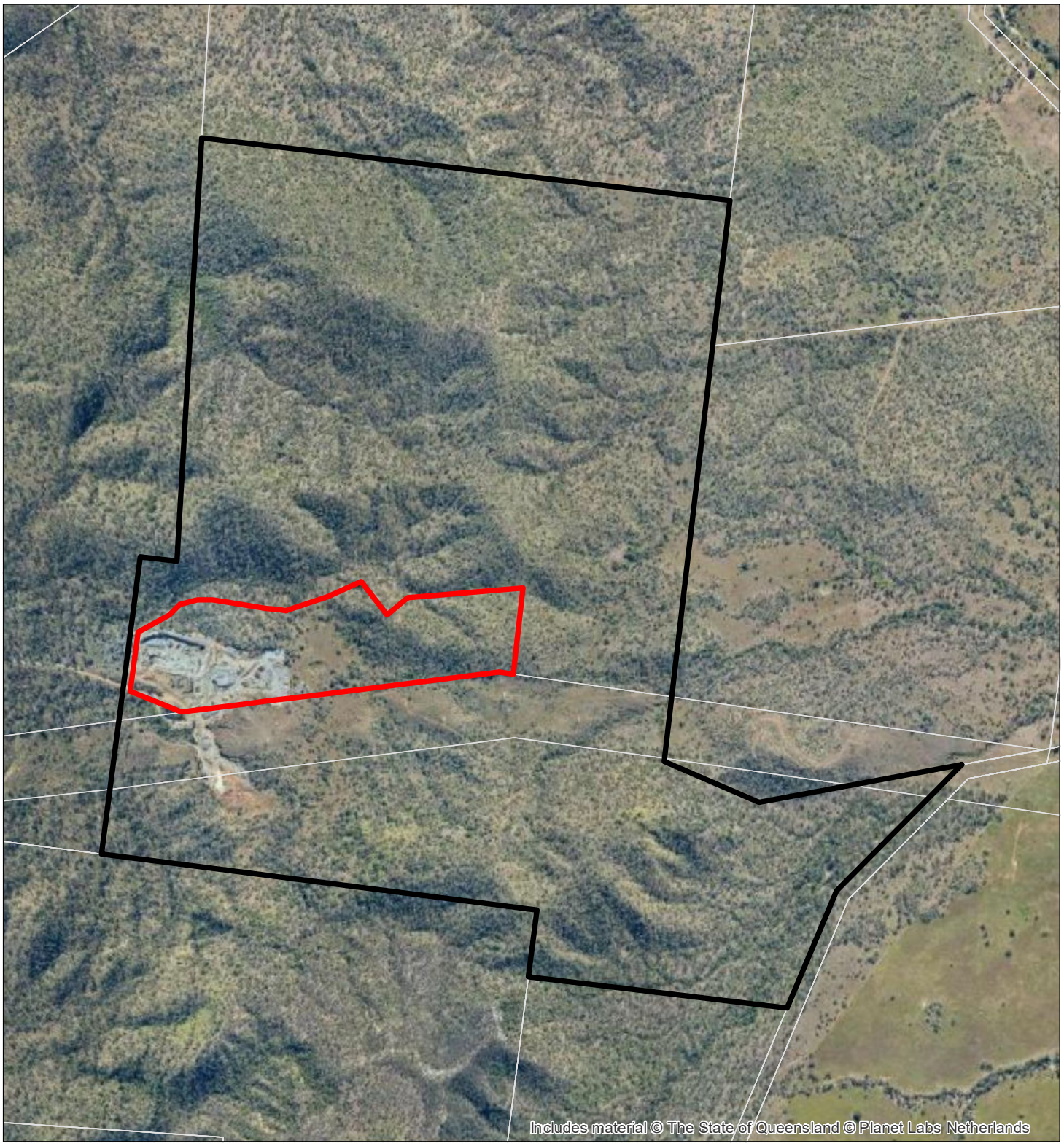
N

Scale (A4): 1:400,000 [GDA 1994 MGA Z56]

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Layer Source: *© State of Queensland (Department of Natural Resources, Mines and Energy) 2020.*



Legend

- Site DCDB
- Imapct Area
- Qld DCDB

Figure 2

Site Aerial

AMCOR
Quarries

File ref. 10314 E Figure 2 Site Aerial A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

N

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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1.2. Site Description

Contextually, the site is located in the Rockhampton Regional Council within the Brigalow Belt Bioregion (Mount Morgan Ranges Subregion and Fitzroy Catchment) and is zoned as Rural. The region generally experiences a subtropical climate, with a mean annual rainfall of 677.2mm (Stanwell Power Station, three kilometres north-west; BOM 2020). The site lies part way between Kabra and Stanwell, approximately 21km south-west of Rockhampton, Qld. (**Figure 1**). The proposed impact area is located in the southern extent of the property boundary (Lot 1 on RP616642), within the following coordinates (**Figure 2**):

- North-west: -23.524568°, 150.345791°
- North-east: -23.524253°, 150.355005°
- South-east: -23.526345°, 150.354717°
- South-west: -23.527116°, 150.345795°

Site assessment has been supported by a desktop review of environmental legislative constraints mapping as well as full systematic field survey undertaken by SHG ecologists.

1.2.1 Remnant Vegetation

Regulated Vegetation Management Mapping shows the site contains a polygon of Category X (non-remnant) vegetation and the remainder of the site is mapped as Category B (remnant) vegetation (refer **Figure 3**).

Category X vegetation is not regulated under the *Vegetation Management Act 1999* (VMA) and therefore clearing is exempt to the VMA within these mapped areas.

The regional ecosystems (RE) present on-site are described as Least Concern RE11.11.15 and RE 11.11.3 (refer **Figure 4**). Both remnant RE's present onsite are mapped as Least Concern under the VM Act. An action proposing to clear native vegetation mapped as remnant under the VM Act must be referred to the State Assessment and Referral Agency (SARA), thus this triggering a response to State Code 16.

The RE mapped within the site is described in **Table 2**.

Table 2: Regional Ecosystem Results

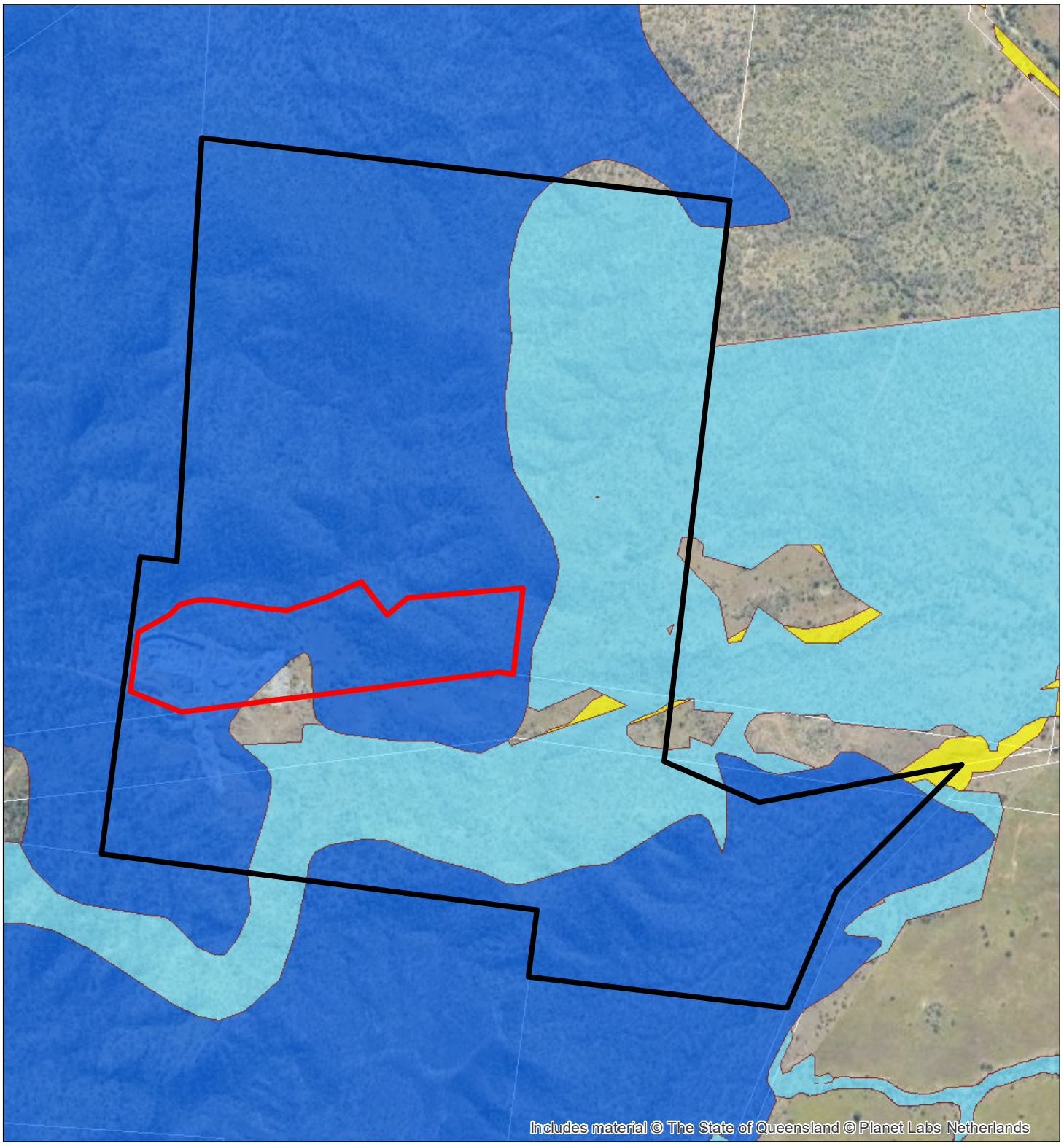
RE	VMA	Description	Structure
11.11.15	Least concern	Open *Eucalyptus* woodland with dominant *E. crebra, E. erythrophloia, E. populnea, E. melanophloia* or *E. tessellaris* on undulating hills. Soil is rocky, comprised of volcanics and sedimentary rocks. Often supports a shrub layer dominated by *Petalostigma pubescens* and *Alphitonia excelsa*.	Sparse
11.11.3	Least concern	Open forest dominated by *Corymbia citriodora, Eucalyptus crebra* and E. a*cmenoides*. Supports shrub layer with *Macrozamia* and *Xanthorrheoa* spp. On rocky soils (volcanics and sediments).	Sparse

1.2.2 Essential Habitat

Essential Habitat mapping for *Cycas megacarpa* is associated with mapped Endangered RE11.11.3 and 11.11.15 which is presently mapped across the majority of the site. Site surveys confirmed these Regional Ecosystems extend across approximately two-thirds of the area which is currently mapped. (refer **Figure 4**). This area of mapped remnant vegetation is also mapped as a High-risk Trigger Area for Protected Plant species under the NC Act. In accordance with the *Flora Survey Guidelines – Protected Plant Surveys*, comprehensive assessment was completed across the site by a suitably qualified person, as specified under the survey guidelines. No specimens of *C. megacarpa* were detected onsite, with two detected outside the 100-m buffer zone required to be assessed as part of the methodology. With absence of the species confirmed onsite via these in-depth surveys, in addition to assessment of potential impacts to the species utilising the species' Recovery Plan, clearing is proposed for all vegetation across the site.

1.2.3 Watercourses

Waterways mapped under either the VM Act or the Fisheries Act are not present within the proposed impact area. However, a single 'low risk' waterway for waterway barrier works (Fisheries Act) is mapped adjacent to the northern boundary, outside of the impact area (refer Figure 10). An assessment of this mapped waterway was carried out by Ecologists from Saunders Havill.



Legend

- Site DCDB
- Qld DCDB
- Impact Area
- Category B area - *Remnant vegetation*
- Category C area - *High value regrowth vegetation*
- Category R area - *Reef regrowth watercourse vegetation*
- Category X area - *Vegetation not regulated under the VMA*

Figure 3

Regulated Vegetation Management Map

AMCOR Quarries

File ref. 10314 E Figure 4 RVMM A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

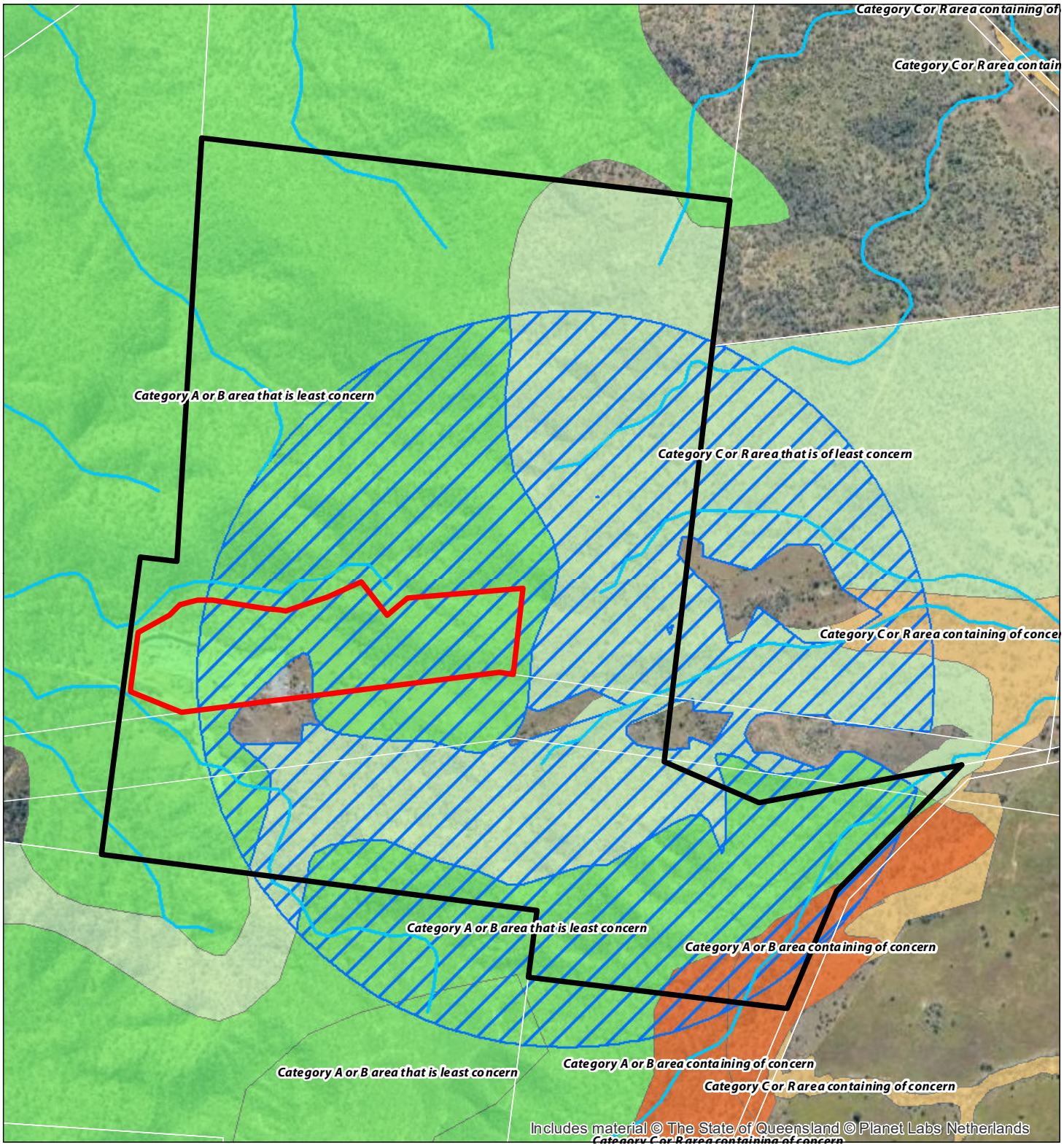
Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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Layer Source: *© State of Queensland (Department of Natural Resources, Mines and Energy; Department of Environment and Science) 2020*



Legend

- Site DCDB
- Qld DCDB
- Impact Area
- VM Watercourses
- VM Essential Habitat

Regional Ecosystems mapping

- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C area containing endangered regional ecosystems
- Category C area containing of concern regional ecosystems
- Category C area that is a least concern regional ecosystem

Figure 4

Regulated Vegetation Supporting Map

AMCOR Quarries

File ref. 10314 E Figure 5 RVSM A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

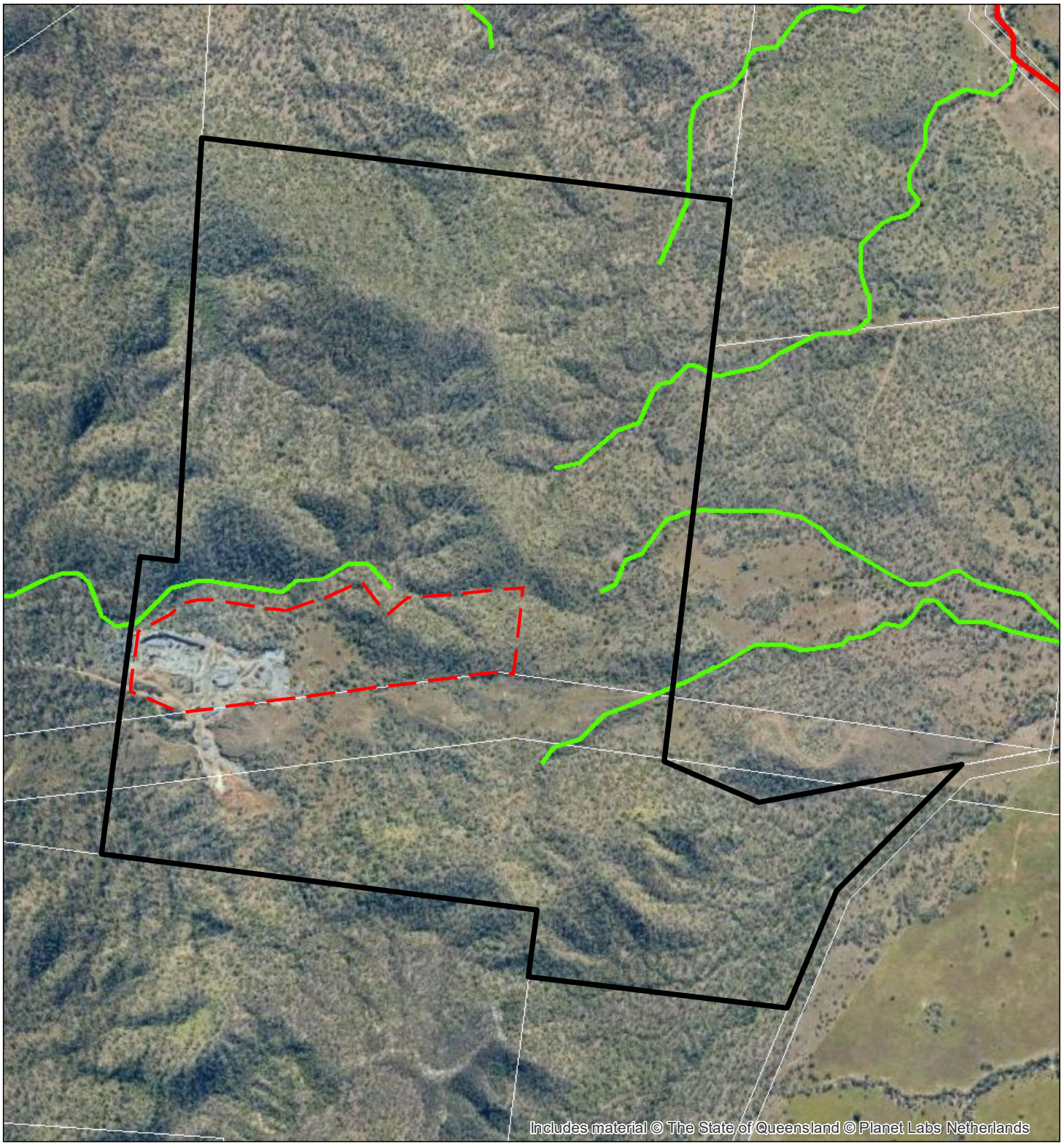
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Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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Legend

- Site DCDB
- Qld DCDB
- Impact Area

Risk of Impact

- 1 - Low
- 2 - Moderate
- 3 - High
- 4 - Major

Figure 5

Fisheries - Waterways for Waterway Barrier Works

AMCOR Quarries

File ref. 10314 E Figure 5 Waterways A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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2. State Code 16: Native Vegetation Clearing

The VMA is the key mechanism by which the Queensland Government protects the State's environmental resources pertaining to vegetation. Under the VMA, a series of maps delineate vegetation features across the landscape that are each assigned a conservation value directly related to the remaining extent of these features in the landscape. The VMA also protects 'essential habitat' vegetation where listed threatened species have been known to occur.

Regulated Vegetation Management Mapping shows vegetation categories used to determine clearing requirements. While areas shown on the map as Category X are not regulated under the VMA, those shown as Category A, B, C or R are subject to clearing requirements. The latter vegetation categories can only be cleared in accordance with an exemption, self-assessable vegetation clearing code, area management plan, or development approval. A supporting map defining REs, wetlands, watercourses and essential habitat is provided in association with the Regulated Vegetation Supporting Map (refer **Figure 4**). Approval for clearing of native vegetation is required under the *Planning Act 2016* (PA). Specifically, assessment is required against *State Code 16: Native Vegetation Clearing* of the State Development Assessment Provisions (SDAP).

3. Proposed Clearing

As discussed in **Section 1**, Regulated Vegetation Management Mapping identifies the part of the site area as containing VMA assessable vegetation – Category B Least Concern RE11.11.15 and RE 11.11.3. The proposed development will result in the removal of Least Concern RE11.11.15 and 11.11.3 vegetation for extractive purposes under the proponent's current ERA. The proposed action is considered a relevant purpose under section 22A (I) of the *Vegetation Management Act 1999*. Clearing will occur within Category X (non-remnant) vegetation, in addition to the vegetation mapped onsite as Category B Remnant vegetation (Least Concern). Notably, the vegetation mapped onsite is currently not representative of existing vegetation on-ground. In addition, the essential habitat mapped over the vegetation has been comprehensively surveyed, as detailed within Section 1, the Protected Plants Report, the Ecological Assessment Report (EAR) and the Matters of National Environmental Significance (MNES) Report.

Mapping of remnant REs on the site triggers a response to State Code 16 as approximately 24.5ha (14.3ha ground-truthed) of Category B vegetation is to be removed to enable extraction.

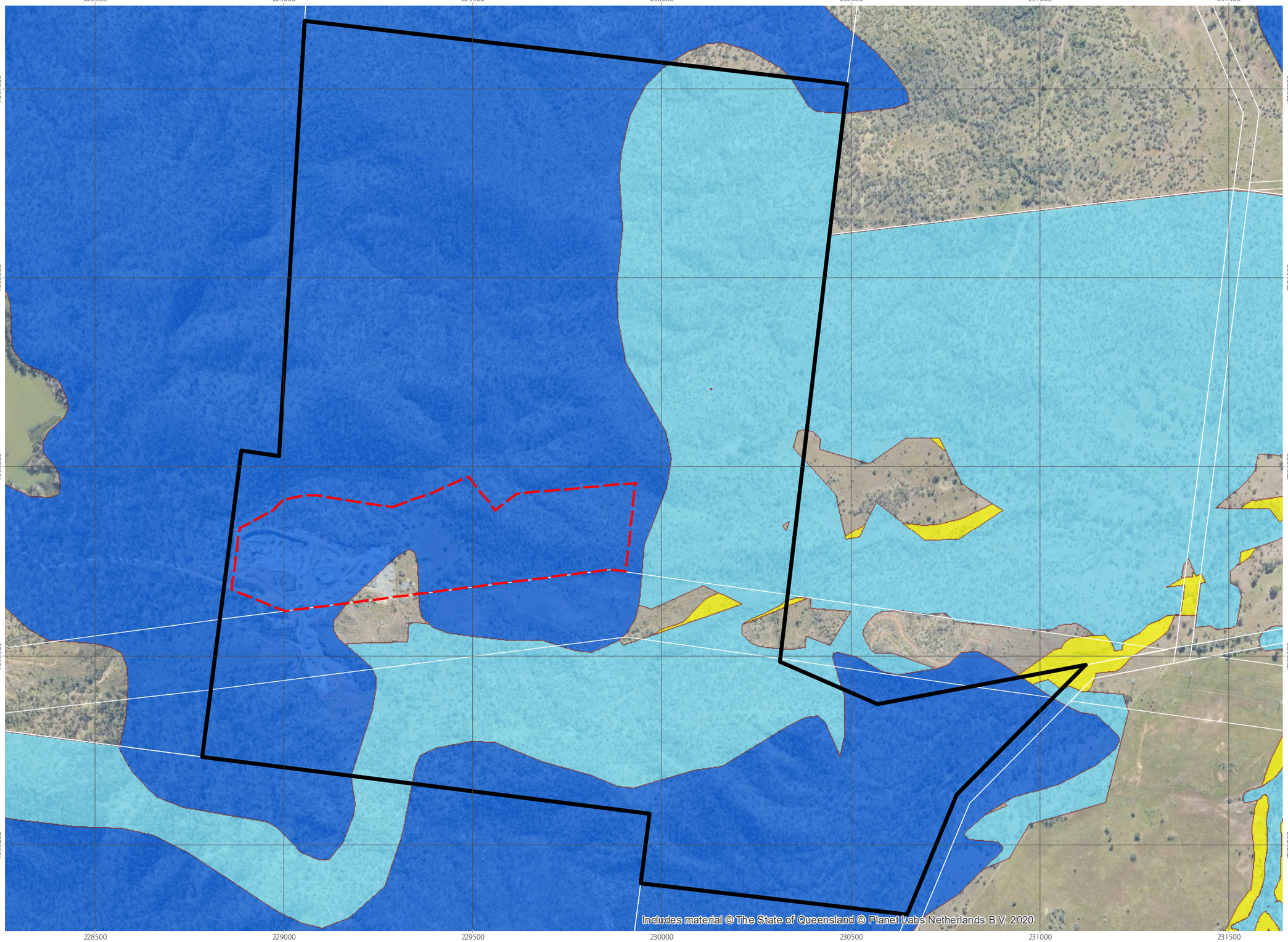
This State Code 16 response is to support a development permit for MCU and Operational Works (vegetation clearing) (**Figure 1**). As the application is for a lot greater than 5 ha, and contains referral vegetation (i.e. native Remnant Vegetation under the VM Act), a response to State Code 16 is provided in **Section 4** of this report, covering the following tables:

- Table 16.2.2 – PO1 – PO4
- Table 16.2.3 – PO7, PO11, PO16, PO20, PO22 – PO24, PO27, PO28

The Property Vegetation Management Plan (refer **Plan 1**) outlines the areas of remnant vegetation present on the site and the prosed clearing area which is reflective of the extent mapped onsite. **Plan 2** details the areas of vegetation which were ground-truthed onsite as a true representation of remnant vegetation in light of the extent of clearing which has previously occurred.

A response to the relevant Performance and Acceptable Outcomes for Table 16.2.2 and 16.2.3 of State Code 16 of the SDAP is provided in **Section 4**.

1. Property Vegetation Management Plan



Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources

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Legend

- Qld DCDB
- Site DCDB
- Impact area

Regulated Vegetation

- Category B area - *Remnant vegetation*
- Category C area - *High value regrowth vegetation*
- Category R area - *Reef regrowth watercourse vegetation*
- Category X area - *Vegetation not regulated under the VMA*

Issue	Date	Description	Drawn	Checked
A	18/03/2021	Preliminary	TC	NT

0 100 200 300 400 m

Transverse Mercator | GDA 1994 | Zone 56 | 1:10,000 @ A3

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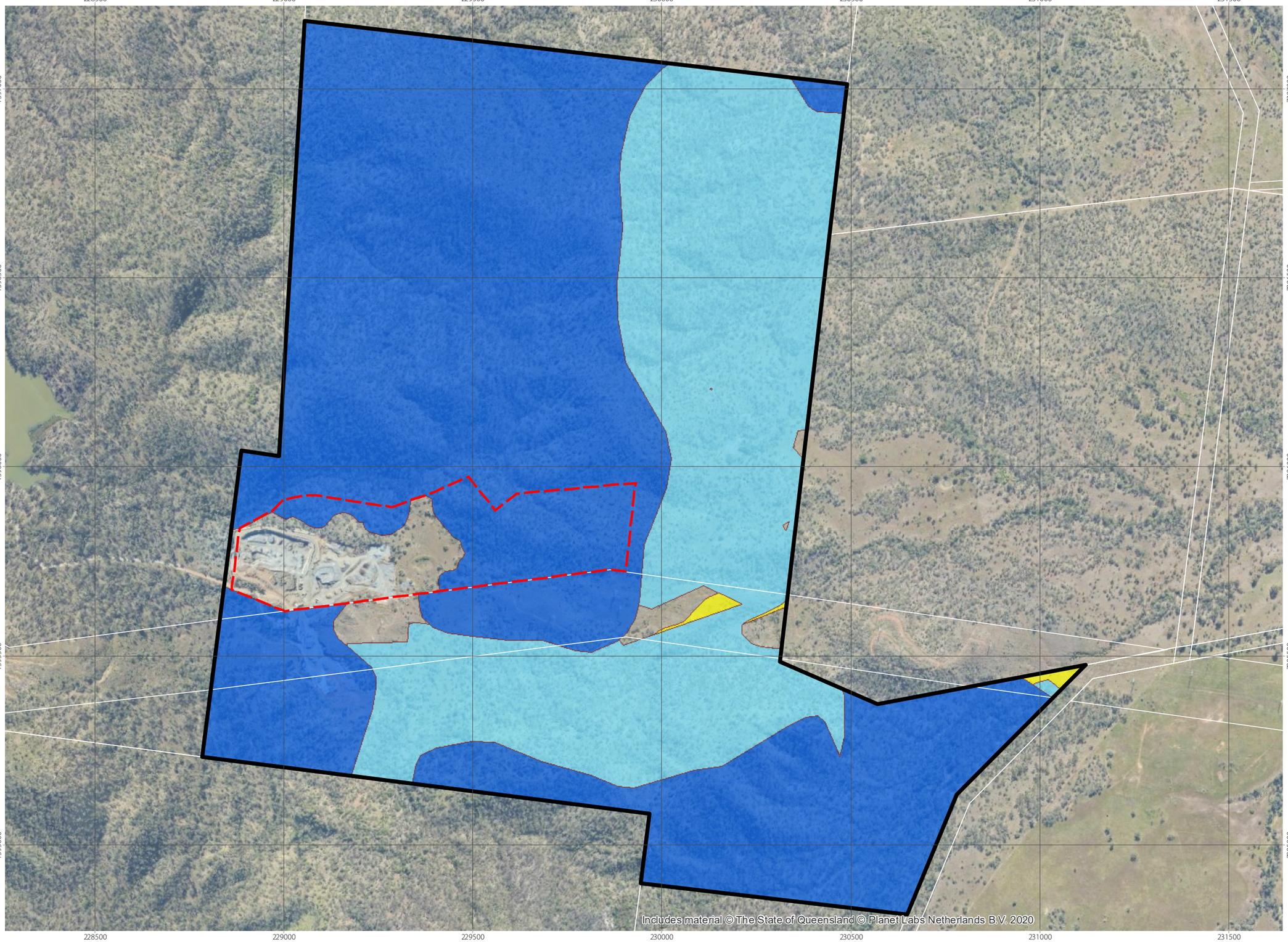
AMCOR Quarries & Concrete Pty Ltd

Hume Road, Kabra

Address / RPD: 1RP616642

18/03/2021 | 10314E01PVMPA

2. Property Vegetation Management Plan (Ground-truth Vegetation)



Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources

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Legend

- Qld DCDB
- Site DCDB
- Impact area

Regulated Vegetation (ground-truth)

- Category B area - *Remnant vegetation*
- Category C area - *High value regrowth vegetation*
- Category R area - *Reef regrowth watercourse vegetation*
- Category X area - *Vegetation not regulated under the VMA*

Issue	Date	Description	Drawn	Checked
A	18/03/2021	Preliminary	TC	MM

0 100 200 300 400 m

Transverse Mercator | GDA 1994 | Zone 56 | 1:10,000 @ A3

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AMCOR Quarries & Concrete Pty Ltd

Hume Road, Kabra

Address / RPD: 1RP616642

18/03/2021 | 10314 E02 PVMP A

4. Response to State Code 16: Native Vegetation Clearing

Table 16.2.2: General

Performance outcomes	Acceptable outcomes	Response
Clearing avoids or minimises impacts		
PO1 Clearing and adverse impacts of clearing do not occur unless the application has demonstrated that the clearing and the adverse impacts of clearing have been: 1. reasonably avoided; or 2. reasonably minimised where it cannot be reasonably avoided.	No acceptable outcome is prescribed.	**Complies with PO1** The clearing is proposed for the 25.6ha polygon of Lot 1 on RP616642, which comprises approximately 321ha in total. With the Lot being predominantly comprised of Category B (remnant) and Category C (Regrowth) vegetation, the proposed action is unable to avoid clearing a portion of this vegetation. The current EA (EPPR00424513) is held across this parcel however, clearing is proposed for a minimal amount of this area. Presently, the entire Lot is mapped as remnant or regrowth vegetation with the exception of two small polygons of category x non-remnant vegetation, one of which is included within the proposed clearing area (see **Figure 3**). In addition, the proposed clearing adjoins an easement parcel, which has been previously cleared and has the potential to be cleared at any time. Access roads to the site currently exist, with the clearing proposing to extend a pre-existing extraction area. Locating the proposed action in this area minimises the need to clear additional areas for new access roads. Clearing within the proposed polygon maintains extensive remnant and mature regrowth vegetation to the north of the impact site, within 1RP616642, which continues to facilitate habitat

Performance outcomes	Acceptable outcomes	Response
		connectivity east-west towards the conservation reserves as well as north-south through the site. As the proposed action has been sited to avoid clearing and adverse impacts (e.g. causing habitat fragmentation) within mapped remnant and regrowth vegetation with clearing focused around currently cleared areas, the proposal complies with PO1.
Clearing on land in particular circumstances		
PO2 Clearing is consistent with any notice requiring compliance on the land subject to the development application, unless a better environmental outcome can be achieved.	No acceptable outcome is prescribed.	**Not applicable.** The subject site is not subject to any notices listed in PO2.
PO3 Clearing is consistent with vegetation management requirements for particular regulated areas unless a better environmental outcome can be achieved.	No acceptable outcome is prescribed.	**Not applicable.** The development does not involve clearing on land that is defined as a particular regulated area.
PO4 Clearing of a legally secured offset area: 1. is consistent with the offset delivery plan; or agreement for the offset area on the land subject to the development application; or 2. only occurs if an additional offset is provided.	No acceptable outcome is prescribed**.**	**Not applicable.** The development does not involve clearing on land that contains an existing environmental offset.
Clearing associated with wetlands (public safety, relevant infrastructure activities, consequential development of IPA approval, a coordinated project, extractive industry)		

Performance outcomes	Acceptable outcomes	Response
PO7 Clearing maintains the current extent of vegetation associated with any natural wetland to protect: 1. bank stability by protecting against bank erosion; and 2. water quality by filtering sediments, nutrients and other pollutants; and 3. aquatic habitat; and 4. terrestrial habitat.	AO7.1 Clearing does not occur in a natural wetland or within 100 metres of the defining bank of any natural wetland. OR AO7.2 Clearing within 100 metres of the defining bank of any natural wetland: 1. does not occur within 10 metres of the defining bank of any natural wetland; and 2. does not exceed widths in table 16.3.1 in this code. OR AO7.3 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, an offset is provided for any acceptable significant residual impact from clearing of vegetation associated with a natural wetland (matter of state environmental significance).	**Complies with AO7.1.** Clearing is not proposed within a natural wetland, nor within 100 m of the defining bank of any natural wetland.
Clearing associated with watercourses and drainage features (public safety, relevant infrastructure activities, consequential development of IPA approval, coordinated project, extractive industry)		
PO11 Clearing maintains the current extent of vegetation associated with any watercourse or drainage feature to protect: 1. bank stability by protecting against bank erosion; and 2. water quality by filtering sediments, nutrients and other pollutants; and 3. aquatic habitat; and 4. terrestrial habitat.	AO11.1 Clearing does not occur in any of the following areas: 1. inside the defining bank of a watercourse or drainage feature; and 2. within the relevant distance of the defining bank of any watercourse or drainage feature in table 16.3.2 of this code. OR AO11.2 Clearing within any watercourse or drainage feature, or within the relevant distance of the defining	**Complies with PO11** Clearing is not proposed to occur within the defining bank of a watercourse or drainage feature. As such, clearing maintains the current extent of vegetation associated with bank stability, water quality, aquatic habitat and terrestrial habitat.

Performance outcomes	Acceptable outcomes	Response
	bank of any watercourse or drainage feature in table 16.3.2 of this code: 1. does not exceed the widths in table 16.3.1 of this code; and 2. does not occur within 10 metres of the defining bank, unless clearing is required into or across the watercourse or drainage feature. OR AO11.3 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, an offset is provided for any acceptable significant residual impact from clearing of vegetation associated with any watercourse or drainage feature (a matter of state environmental significance).	
Connectivity areas		
PO16 In consideration of vegetation on the land subject to the development application and on adjacent land, sufficient vegetation is retained to maintain ecological processes and remains in the landscape despite threatening processes.	AO16.1 Clearing occurs in accordance with table 16.3.3 in this code	**Complies with PO16.** The quarry extension proposes to impact approximately 25.6ha of Lot 1 on RP16642, for which an Environmental Authority (EPPR00424513) is held. The total area of this Lot is approximately 321ha, the majority of which will not be impacted under this Development Application. In addition, the site exists within a large proposed state biodiversity corridor, with mostly undeveloped land across its 10km-width, in the vicinity of the proposed quarry site. The site will remove a small patch of this proposed large-scale biodiversity corridor, allowing wildlife movement opportunities to remain intact north and south of the site, in addition to maintaining east-west connectivity.

Performance outcomes	Acceptable outcomes	Response
		The clearing complies with specifications outlined within Table 16.3.3 in the code for non-coastal bioregions and subregions.
Soil erosion (public safety, relevant infrastructure activities, extractive industry, consequential development of IPA approval, coordinated project, necessary environmental clearing)		
PO20 Clearing does not result in accelerated soil erosion within or outside the land the subject of the development application.	AO20.1 Clearing only occurs if an erosion and sediment control plan is developed and implemented to: 1. prevent accelerated soil erosion; or 2. where prevention is not possible, minimise accelerated soil erosion. OR AO20.2 The local government is the assessment manager for the development application.	**Complies with AO20.2** The local government (Rockhampton Regional Council) is the assessment manager for the development application. In addition, an erosion and sediment control plan will be developed and implemented onsite during works. This is also consistent with the current management of the site and existing quarry works.
Salinity (public safety, relevant infrastructure activities, consequential development of IPA approval, coordinated project, extractive industry, necessary environmental clearing, encroachment, fodder harvesting)		
PO22 Clearing does not contribute to or accelerate land degradation through waterlogging, or through the salinisation of groundwater, surface water or soil.	AO22.1 Clearing does not occur within 100 metres of a salinity expression area.	**Complies with AO22.1** Clearing will not occur within 100 m of a salinity expression area.
Conserving endangered and of concern regional ecosystems (public safety, relevant infrastructure activities, consequential development of IPA approval, coordinated project, extractive industry)		
PO23 Clearing maintains the current extent of endangered regional ecosystems and of concern regional ecosystems.	AO23.1 Clearing does not occur in an endangered regional ecosystem or an of concern regional ecosystem. OR	**Complies with AO23.2.** The proposed action proposes to clear areas mapped as category X non-remnant and category B Least Concern vegetation only. As such, the clearing maintains the extent

Performance outcomes	Acceptable outcomes	Response
	AO23.2 Total clearing of endangered regional ecosystems and of concern regional ecosystems combined does not exceed the widths prescribed in table 16.3.1 of this code. OR AO23.3 Total clearing of endangered regional ecosystems and of concern regional ecosystems combined does not exceed areas prescribed in table 16.3.1 of this code. OR AO23.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, an offset is provided for any acceptable significant residual impact from clearing of endangered regional ecosystems and of concern regional ecosystems (a matter of state environmental significance).	of endangered regional ecosystems and of-concern regional ecosystems.
Essential habitat (public safety, relevant infrastructure activities, consequential development of IPA approval, coordinated project, extractive industry, fodder harvesting)		
PO24 Clearing maintains the current extent of essential habitat.	AO24.1 Clearing does not occur in essential habitat. OR AO24.2 Clearing in essential habitat does not exceed the widths prescribed in table 16.3.1 of this code. OR	**Complies with A024.2** Clearing is proposed for approximately 20.4ha of vegetation mapped as essential habitat under the VM Act. Detailed ecological surveys identified approximately 14 hectares to meet the minimum requirements of these mapped regional ecosystem communities with the remaining area failing to meet the height and density required for such remnant status. The proposed clearing polygon has a maximum width of approximately 283m.

Performance outcomes	Acceptable outcomes	Response
	AO24.3 Clearing in essential habitat does not exceed the areas prescribed in table 16.3.1 of this code. OR AO24.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, an offset is provided for any acceptable significant residual impact from clearing of essential habitat (a matter of state environmental significance).	These measurements do not comply with AO24.2 or AO24.3. This vegetation has been thoroughly assessed by a suitably qualified person via adherence to the Protected Plants surveys under the NC Act. No specimens of the species, for which essential habitat is mapped, *Cycas megacarpa*, are present onsite, although two individuals are present within 200m of the site boundary. Impacts to these individuals will not occur during any stage of clearing or extractives under this DA. AO24.4: As clearing cannot be reasonably avoided to enable the proposed action, an offset will be provided to compensate for the loss of any essential habitat following a dispute of essential habitat.
Acid sulfate soils (public safety, relevant infrastructure activities, consequential development of IPA approval, coordinated project, extractive industry, necessary environmental clearing, necessary to control non-native plants or declared pests, managing thickened vegetation, encroachment)		
PO27 Clearing does not result in, or accelerate, disturbance of acid sulfate soils or changes to the hydrology of the location that will result in either of the following: 1. aeration of horizons containing iron sulphides; or 2. mobilisation of acid or metals.	AO27.1 Clearing does not occur in land zone 1, land zone 2 or land zone 3. OR AO27.2 Clearing in land zone 1, land zone 2 or land zone 3 in areas below the five metre Australian Height Datum only occurs where: 1. mechanical clearing does not disturb the soil to a depth greater than 30 centimetres; and 2. acid sulfate soils are managed consistent with the State Planning Policy, Department of Infrastructure,	Complies with AO27.3 The local government (Rockhampton Regional Council) is the assessment manager for the development application. In addition, proposed clearing occurs within landzone 11 and over 100m above sea level.

Performance outcomes	Acceptable outcomes	Response
	Local Government and Planning, July 2017, and with the soil management guidelines in the Queensland Acid Sulfate Soil Technical Manual, Department of Science Information Technology Innovation and the Arts, 2014. OR AO27.3 The local government is the assessment manager for the development application.	
PO28 Clearing 1. is staged in line with operational needs that restrict clearing to the current operational area: and 2. only occurs in the area from which material will be extracted, and any reasonably associated built infrastructure, within the terms of the development approval; and 3. does not occur without required permits.	No acceptable outcome is prescribed.	1) Vegetation clearing onsite will be staged as per the requirements and clearing will occur immediately prior to planned extractive work. Site-based management plans, including a Vegetation Clearing Management Plan (VCMP) will be developed for the site). 2) Clearing of native vegetation will only take place in necessary locations. Resource mapping will be completed, whereby areas of indicative resource availability will be determined prior to any vegetation clearing commencing, to confirm financial viability of resource extraction in specific locations. 3) All permits required for vegetation clearing, extractions and associated environmental approvals will be obtained prior to commencement of clearing.

5. Conclusion

Saunders Havill Group was engaged by Amcor Quarries to provide a SDAP *State Code 16: Native Vegetation Clearing* (Version 2.5) to support a development application to Rockhampton Regional Council over the site located at 294 Hume Road, Kabra (Lot 1 on RP616642). Specifically, the application seeks a Development Permit for a MCU and Operational Works (vegetation clearing).

The site is mapped as containing Category X (non-remnant) vegetation and Category B (remnant) vegetation which is described as Least Concern RE11.11.15 and RE11.11.3. Despite Category B vegetation being mapped across the majority of the proposed impact site, on-ground surveys confirmed this mapping as incorrect, with historical clearing and the operational quarry site currently mapped as remnant vegetation. The proposed extraction site has been located partly within non-remnant vegetation, and within vegetation mapped as remnant, adjoining current extractive and transport operations.

The site is located at 294 Hume Rd, Kabra, described as part of Lot 1 on RP616642, with a total impact area of 25.6 hectares (ha). Detailed ecological surveys identified approximately 14 hectares of this impact area to meet the minimum requirements for remnant status for both regional ecosystem communities. The remaining mapped area would fail to meet remnant status based on both height and canopy density of the open forest and woodland vegetation community.

The proposed clearing is located outside the defining bank of any waterways and within areas of vegetation that adjoin current operations. This vegetation, despite being mapped as essential habitat for *Cycas megacarpa*, has been confirmed through comprehensive flora surveys, as not supporting individuals of this species.

This State Code 16 response provides adequate support through detailed desktop analysis and comprehensive ecological field surveys to highlight that the proposed MCU and Operational Works (Vegetation Clearing) application complies with the relevant performance and acceptable outcomes of the code.

saunders havill group

Know How

State Code 22 Response

Stanwell Quarry Extension

294 Hume Road, Kabra

Prepared for Amcor Quarries

Our Reference: 10314

19 March 2021



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ABN 24 144 972 949
www.saundershavill.com

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Document Issue

Issue	Date	Prepared By	Checked By
Issue A	19.03.2021		MM

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Tables

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Acronyms and Abbreviations

CBD	Central Business District
DAF	Department of Agriculture and Fisheries (Qld)
DBH	Diameter at Breast Height
DCP	Development Control Plan
DES	Department of Environment and Science (Qld)
DoEE	Department of the Environment and Energy (Commonwealth)
EAR	Ecological Assessment Report
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
GBO	Global Biosecurity Obligation
ha	hectares
km	kilometres
m	metres
MBRC	Moreton Bay Regional Council
mm	millimetres
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
NCA	Nature Conservation Act 1992 (Qld)
NCWR	Nature Conservation (Wildlife) Regulation 2006 (Qld)
PKADA	Priority Koala Assessable Development Area
PMR	Protected Matters Report
PSP EAC	Planning Scheme Policy Environmental Areas and Corridors
RE	Regional Ecosystem
SPP	State Planning Policy 2017 (Qld)
SRZ	Structural Root Zone
TEC	threatened ecological community (under the EPBC Act)
TPZ	Tree Protection Zone
VMA	Vegetation Management Act 1999 (Qld)

1. Introduction

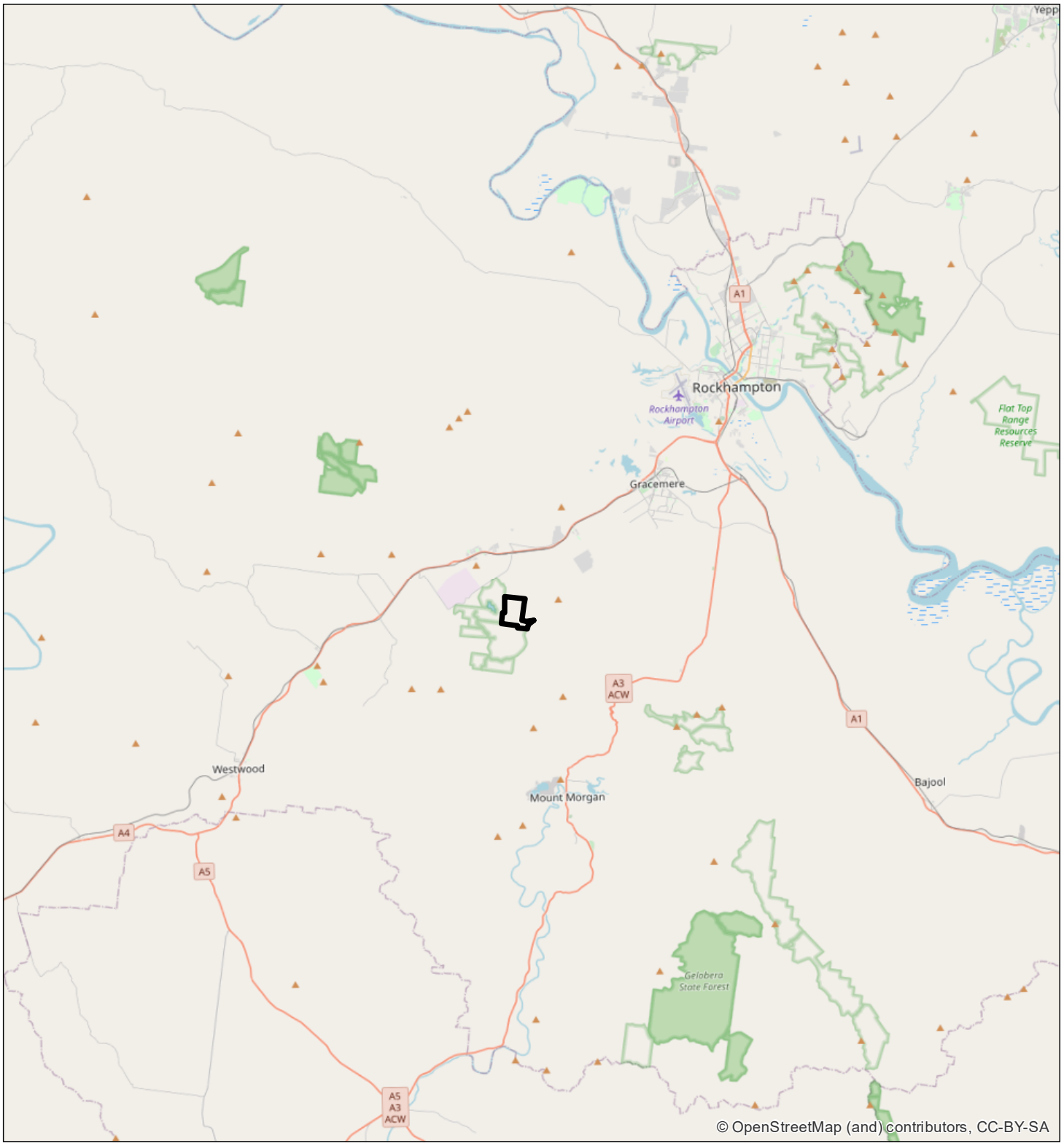
Saunders Havill Group was engaged by AMCOR Quarries and Concrete Pty Ltd to prepare a response to the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) State Assessment and Referral Agency's (SARA) State Development Assessment Provisions (SDAP) State Code 22: Environmentally Relevant Activities. This response is intended to support a development application to Rockhampton Regional Council (RRC) involving a Development Permit for a Material Change of Use (MCU) and Operational Works (Vegetation Clearing).

The site is located at 294 Hume Rd, Kabra, described as part of Lot 1 on RP616642, with a total impact area of 25.6 hectares (ha). The site context and aerial are shown in **Figure 1** and ***Figure 2*** respectively.

1.1. Property summary

Table 1: Property summary

Address	294 Hume Road, Kabra
Size	Approx. 25.6 ha
Lots	Part of Lot 1 on RP616642
VM Act 1999	Category B - Remnant (Least concern, RE11.11.15/11.11.3/11.11.5) Category X - Non-remnant
MSES	Wildlife habitat (endangered or vulnerable) Regulated vegetation (essential habitat)
Koala Habitat	Outside of Koala Priority Area No Koala Habitat Area mapped on-site
LGA	Rockhampton Regional Council
Planning scheme / local plan	Rockhampton Regional Planning Scheme
Environmental overlays	MLES – General MSES – Wildlife habitat Waterways



Legend

Site DCDB

Figure 1

Site Context

AMCOR Quarries

File ref. 10314 E Figure 1 Site Context A_
Date *11/12/2020*
Project *Hume Road, Kabra*

0 5 10 20 *km*

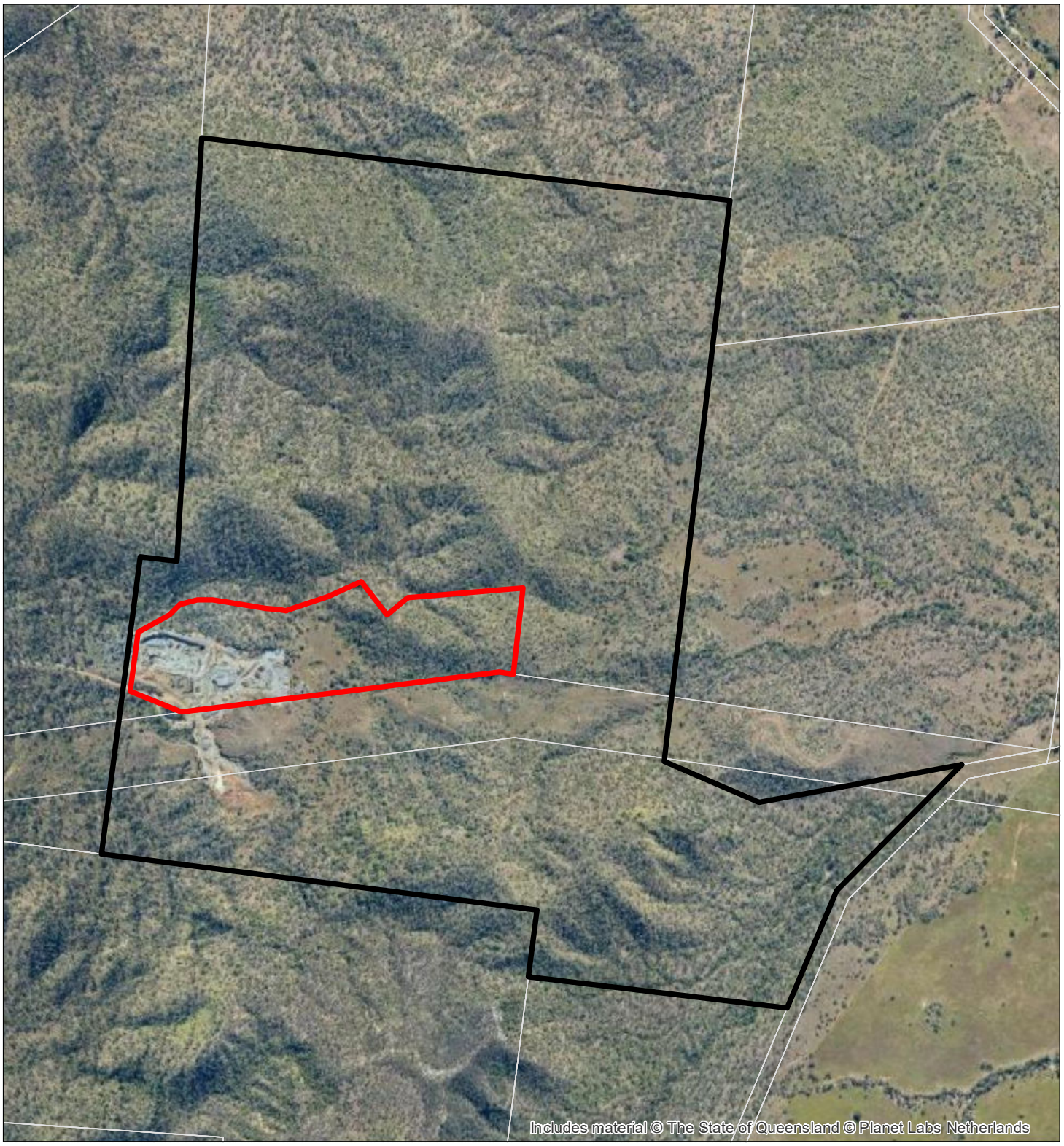
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Scale (A4): 1:400,000 [GDA 1994 MGA Z56]

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Legend

- Site DCDB
- Imapct Area
- Qld DCDB

Figure 2

Site Aerial

AMCOR
Quarries

File ref. 10314 E Figure 2 Site Aerial A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

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Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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1.2. Purpose of the Report

The State Assessment and Development Provisions (SDAP) provide a set of criteria which must be complied with to afford approval under relevant legislation. Quarries require approval as an Environmentally Relevant Activity under the *Environmental Protection Act 2008*, which in turn must comply with the Performance Outcomes within the applicable SDAP code. State Code 22 considers 9 individual performance outcomes which are applied to categories of activities seeking approval as an ERA.

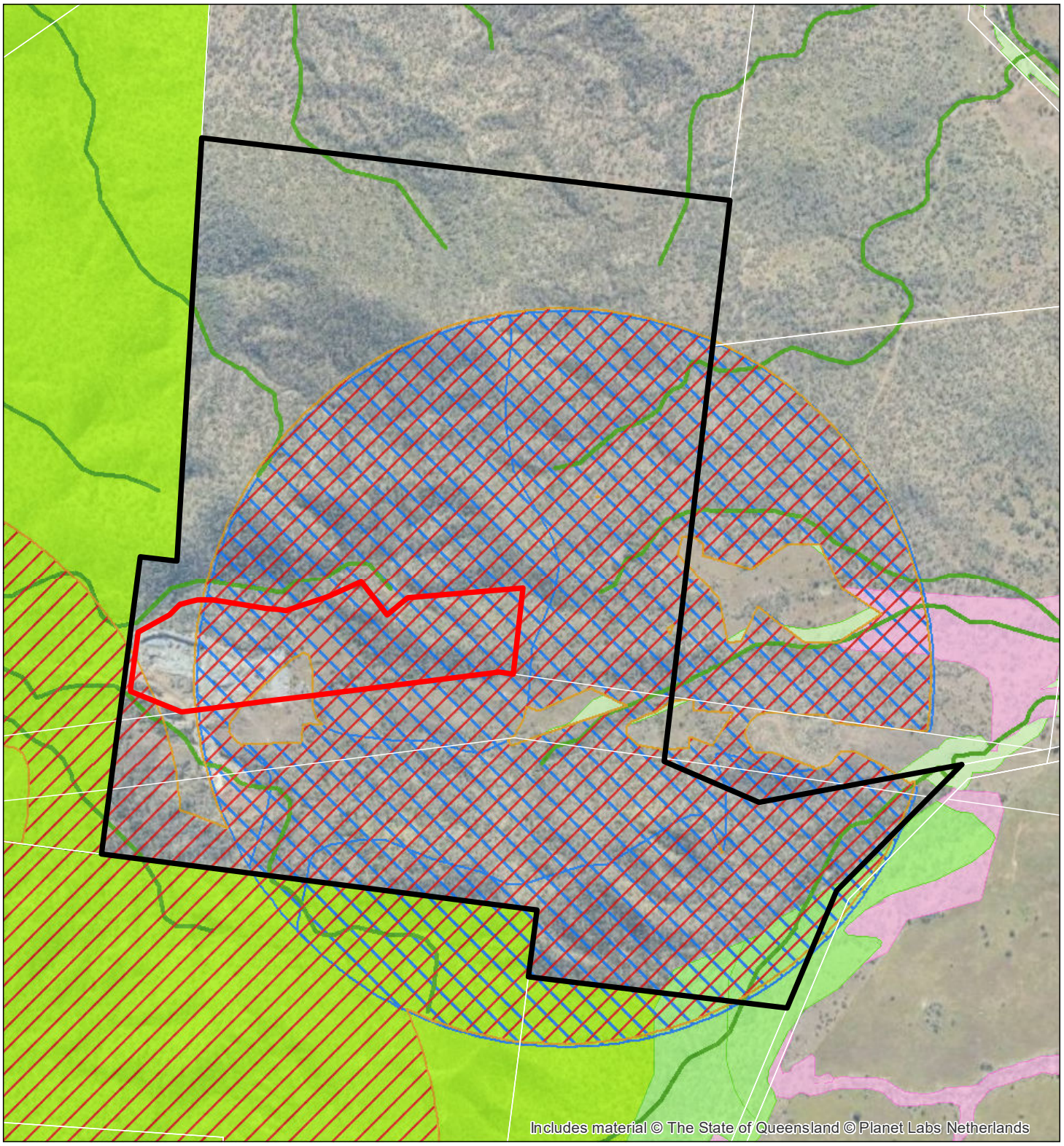
This report provides a response to the applicable performance outcomes (PO) within State Code 22, being PO7 and PO8.

2. Response

Performance outcomes	Acceptable outcomes	Response
All ERAs		
All development – matters of environmental significance		
PO7 Development: 1. avoids impacts on matters of state environmental significance; or 2. minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and 3. provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance. Statutory note: For Brisbane core port land, an offset may only be applied to development on land identified as E1 Conservation/Buffer, E2 Open Space or Buffer/Investigation in the Brisbane Port LUP precinct plan. For the Brisbane Port LUP, see www.portbris.com.au. Note: Guidance for determining if the development will have a significant residual impact on a matter of state environmental significance is provided in the Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, 2014. Where the significant residual impact is considered an acceptable impact on the matter of state environmental significance and an offset is considered appropriate, the offset should be delivered in accordance with the *Environmental Offsets Act 2014*.	No acceptable outcome is prescribed.	1. **Avoids impacts** The clearing is proposed for a 25.6ha polygon within the southern extent of Lot 1 on RP616642, which comprises approximately 321ha in total. With the Lot being predominantly comprised of Category B (remnant) and Category C (Regrowth) vegetation, the proposed action is unable to avoid clearing a portion of this vegetation, if extractive activities are to occur onsite. Essential habitat is mapped across a portion of this remnant and regrowth vegetation, within a 1000m radius of a previous species record. Despite comprehensive surveys confirming the species is not present onsite, the mapped essential habitat will be impacted during extractive activities. 2. **Minimises and mitigates impacts** The current EA (EPPR00424513) is held across the entire Lot however, clearing is proposed for a minimal amount of this area. Presently, Lot 1 on RP616642 is predominantly mapped as remnant or regrowth vegetation with the exception of two small polygons of Category X non-remnant vegetation, one of which is included within the proposed clearing area (see Figure 3). In addition, the proposed clearing adjoins an easement parcel, which has been previously cleared and has the potential to be cleared at any time. Access roads to the site currently exist, with the clearing proposing to extend a pre-existing extraction area. Locating the proposed action in this area minimises the need to clear additional areas for new access roads. Clearing within the proposed polygon maintains extensive remnant and mature regrowth vegetation to the north of the impact site, within 1RP616642, which continues to facilitate

Performance outcomes	Acceptable outcomes	Response
		habitat connectivity east-west towards the conservation reserves as well as north-south through the site. As the proposed action has been sited to avoid clearing and adverse impacts (e.g. causing habitat fragmentation) within mapped remnant and regrowth vegetation with clearing focused around currently cleared areas, the proposal complies with PO1. The site is proposed to become a quarry for extractive purposes. This will require the removal of all native vegetation within the footprint to facilitate extraction. The action proposes to remove vegetation which is currently mapped as MSES Wildlife Habitat and VM Essential Habitat for the flora species, *Cycas megacarpa* (***Figure 3***). Additionally, this area of mapped MSES is also mapped as a high-risk trigger area under the NC Act, requiring assessment across the site adhering to the *Flora Survey Guidelines – Protected Plants*. These surveys were completed on 17th November 2020 by a suitably qualified person (see Appendix A) with details reported within a Protected Plant species report for the site. No specimens of *Cycas megacarpa* were detected onsite during comprehensive surveys, allowing for an exemption to be applied for under the NC Act. The fulfillment of these survey requirements, with no specimens detected onsite, suggests the clearing of this vegetation will avoid impacting on this particular Matter of State Environmental Significance (MSES). Despite avoidance being demonstrated via on-ground surveys, where any native vegetation is not required to be removed within the footprint, it will be retained and rehabilitation of native vegetation and landform is proposed at completion of extraction onsite. 3. **Provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact**

Performance outcomes	Acceptable outcomes	Response
		Due to the extensive surveys being conducted onsite in accordance with the Queensland Flora Survey Guidelines - Protected Plants, failing to detect the species in addition to assessment of significant residual impacts to *C. megacarpa (*for which essential habitat is mapped), a significant residual impact is not expected to occur due to the proposed action. Should an SRI be deemed to be likely, an offset will be provided in accordance with the *Environmental Offsets Act 2014*.
Category C areas and category R areas of vegetation		
PO8 Development: 1. avoids impacts on category C areas of vegetation and category R areas of vegetation; or 2. minimises and mitigates impacts on category C areas and category R areas of vegetation after demonstrating avoidance is not reasonably possible.	No acceptable outcome is prescribed.	1. The proposed action will not impact on category C or category R areas of vegetation therefore complies with PO8.



Legend

- Site DCDB
- Qld DCDB
- Impact Area
- MSES Wildlife habitat (endangered or vulnerable)
- MSES Regulated vegetation (intersecting a watercourse)
- MSES Regulated vegetation (essential habitat)
- MSES Regulated vegetation (category B)
- MSES Regulated vegetation (category C)
- MSES Regulated vegetation (category R)
- MSES Protected Area (nature refuge)

Figure 3

Matters of State Environmental Significance

AMCOR Quarries

File ref. 10314 E Figure 3 MSES A
Date *11/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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GROUNDWORK plus

STANWELL QUARRY EXTENSION

ENVIRONMENTAL ASSESSMENT REPORT

Prepared for:
AMCOR Quarries & Concrete Pty Ltd

Date:
April 2021

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documents / 1662_620_001

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ATTACHMENTS

Attachment 1 – Proposal Plans
Attachment 2 – EMR / CLR Search Results

1. Introduction

1.1 Background

Groundwork Plus Pty Ltd has been engaged by AMCOR Quarries & Concrete Pty Ltd ('AMCOR') to prepare and submit a Development Application ('DA') to the Rockhampton Regional Council ('Council') for an extension to an existing extractive industry operation located at 294 Hume Road, Kabra QLD 4702, properly described as Lot 1 on RP616642 and part of Lot 44 on SP140243 (herein referred to as the 'site').

The Stanwell Quarry is a hard rock quarry producing up to 1,000,000 tonnes per annum, servicing the Central Queensland region. The site operates under the existing Environmental Authority ('EA') ref. EPPR00424513 administered by the Department of Environment and Science ('DES') for the following prescribed Environmentally Relevant Activities ('ERAs') under the *Environmental Protection Regulation 2019* ('EP Reg'):

- ERA 16 Threshold (2)(b) Extracting, other than by dredging, in a year, the following quantity of material – more than 100,000 tonnes per year but not more than 1,000,000 tonnes per year; and
- ERA 16 Threshold (3)(b) Screening, in a year, the following quantity of material – more than 100,000 tonnes per year but not more than 1,000,000 tonnes per year.

The DA comprises the following components:

- Material Change of Use – Development Permit for Extractive Industry.
- Material Change of Use – Concurrence Environmentally Relevant Activities ('ERAs').
- Operational Work – Development Permit for Vegetation Clearing.

As the extension relates to the carrying out of concurrence ERAs, the DA includes an application for a new EA for the following activities, which are consistent with the ERAs authorised under the existing:

- ERA 16 Threshold (2)(b) Extracting, other than by dredging, in a year, the following quantity of material – more than 100,000 tonnes per year but not more than 1,000,000 tonnes per year.
- ERA 16 Threshold (3)(b) Screening, in a year, the following quantity of material – more than 100,000 tonnes per year but not more than 1,000,000 tonnes per year.

The proposed development is for an extension to the extraction area of the existing Stanwell Quarry only. No changes to the extraction volumes, material haulage or general site operation is proposed. The operation currently has approval to extract and screen up to 1,000,000 tonnes per annum.

The extension of the existing quarry pit will enable AMCOR to access a proven hard rock resource by extending the extraction area. The existing quarry pit is located at the base of the southern face of a hill and it is proposed to expand development east from the existing pit whilst avoiding mapped watercourses and the electricity easement running through the site (refer **Attachment 1 – Proposal Plans**). The proposed development is for an extension to the extraction area only, no changes to the extraction volumes, material haulage or general operation of the quarry are proposed.

1.2 Purpose of the Environmental Assessment Report

The purpose of this Environmental Assessment Report ('EAR') is to support the EA application, by providing the information necessary to assist DES in the assessment process.

The application requirements for Site-specific EA applications for Prescribed ERAs are outlined in Section 125 (l)(i) of the *Environmental Protection Act 1994* ('EP Act') and must include:

- an assessment of the likely impact of the proposed activity on the Environmental Values ('EVs'), including:
    - a description of the EVs likely to be affected by the activity.
    - details of any emissions or releases likely to be generated by the activity.
    - a description of the risk and likely magnitude of impacts on the EVs.

  - details of the management practices proposed to be implemented to prevent or minimise adverse impacts.
  - details of how the land the subject of the application will be rehabilitated after each relevant activity ceases.
- a description of the proposed measures for minimising and managing waste generated by each relevant activity.
- details of any site management plan that relates to the land the subject of the application or any other document relating to the application prescribed under a regulation.

This EAR is limited to an assessment of the proposed changes being the extension of the extraction area. It does not consider the activities authorised to occur under the existing EA.

1.3 Site Description

The location details for the proposed activities are summarised in **Table 2 – Summary of Subject Land**. **Figure 1 – Aerial Photo and Cadastre** provides an illustration of the site.

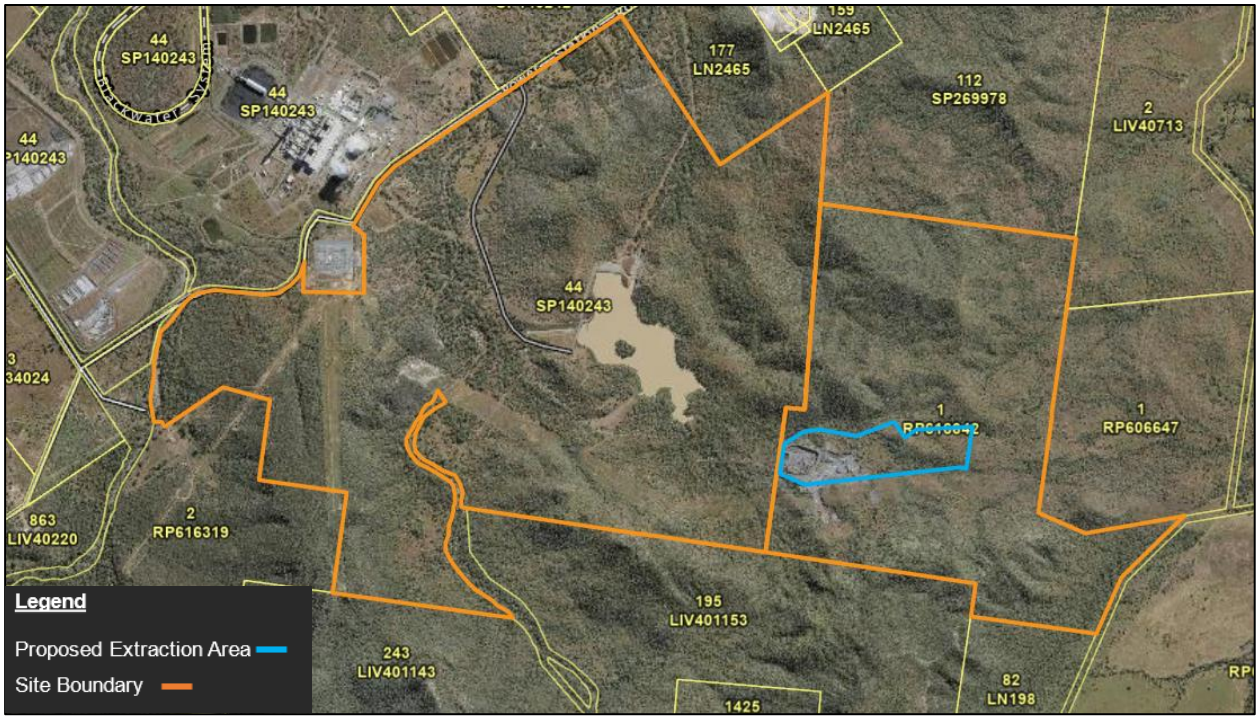


Figure 1 – Aerial Photo and Cadastre
(figure reprinted from Queensland Globe (2021))

Table 1 – Summary of Subject Land

Address	294 Hume Road, Kabra QLD 4702
Access	Power Station Road
Real Property (RP) Description	Lot 1 on RP616642 – for extractive industry Part of Lot 44 on SP140243 – for access
Lot Area	1,440 hectares
Local Authority	Rockhampton Regional Council

1.4 Description of Activities

The quarry operations are anticipated to comprise the following basic elements:

- Clearing of vegetation and stripping of topsoil and overburden via mechanical means (i.e., bulldozer or excavator). Stockpiling topsoil and overburden for future use as saleable general fill, incorporation into onsite rehabilitation works where required, or use in construction of stormwater controls (e.g., perimeter banks / bunds).

- Drilling and blasting the exposed underlying rock from the developed quarry benches to reduce the material into a manageable size for relocation of the materials to the quarry pit or bench below for processing.
- Transferring raw material to the crushing and screening plant/stockpile area using off-road haul truck(s) loaded by an excavator or front-end loader.
- Crushing and screening raw material using a mobile crushing and screening plant.
- Stockpiling the final products using a front-end loader and/or off-road haul truck before the material is sold and loaded into trucks for transportation off-site for use.
- Rehabilitating disturbed areas progressively once the terminal quarry benches have been established.

1.5 Hours of Operation

The hours of operation will remain the same at 6:00am to 6:00pm Monday to Saturday with no operations on Sundays or public holidays.

Blasting will be limited to 9:00am to 3:00pm Monday to Friday, and 9:00am to 1:00pm on Saturdays in accordance with Condition 2N3 of the existing EA.

1.6 Plant and Equipment

The number of plant and equipment deployed on-site is anticipated to vary from time-to-time to service the project demands. Types of major plant and equipment deployed on-site may include, but not limited to:

- Bulldozer.
- Grader.
- Excavator.
- Off-highway haul trucks.
- Front-end loader.
- Mobile crushing and screening plant.
- Haul road trucks.

Machinery repairs and maintenance will be carried out on-site where practicable within a designated workshop area. Stationary equipment will generally be serviced in the field unless it is practical for the parts to be dismantled and transported to the workshop. Consumables (e.g., tyres, oils and greases) will be supplied by contractors and removed (including associated packaging) for disposal off-site in accordance with the requirements of the prevailing legislation and the local authority on a regular basis.

1.7 Eligibility Criteria and Standard Conditions

ERA 16 Threshold (2)(b) and ERA 16 Threshold (3)(b) are not activities to which an ERA standard applies. Therefore, the eligibility criteria and standard conditions do not apply to the proposed activity and no further assessment of the eligibility criteria or standard conditions has been included in the application material.

Applicants who are not able to meet the eligibility criteria prescribed by the administering authority are required to make a Site-Specific EA application. As a result, a Site-Specific EA is applied for, subject to the *Model operating conditions—ERA 16—Extractive and screening activities* (MOC) (DES 2019).

2. Description of Environmental Values

It must be noted that, as the site is a pre-existing extractive industry activity which has well-understood receiving environments and sensitive receptors, the below is an assessment of the EVs relevant to the proposed changes only. It does not consider the activities already authorised to occur under the existing EA.

2.1 Regional Context

2.1.1 Land Use

Refer to **Figure 1 – Aerial Photo and Cadastre** for an illustration of the site and surrounding area. The site is a pre-existing extractive industry. **Table 2 – Adjacent Land Uses** provides a summary of the land uses surrounding the site.

Table 2 – Adjacent Land Uses

Direction	Land Use
North	Extractive industry activities
East	Vacant land / agricultural activities
South	Vacant land / agricultural activities
West	Stanwell Power Station

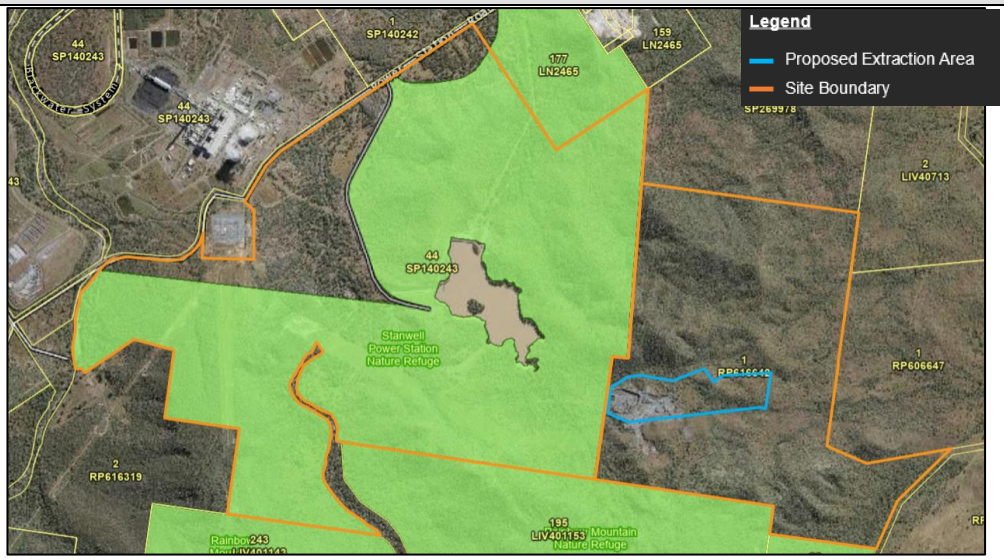
2.1.2 Nearest Sensitive Receptors

Sensitive receptors, as defined under Schedule 1 of the *Environmental Protection Policy (Noise) 2019*, are outlined in **Table 6 – Nearby Sensitive Receptors**. A discussion on whether any of these sensitive receptors are in close proximity to the site is provided herein.

Table 3 – Nearby Sensitive Receptors

Sensitive Receptor	Description and Location
Residence	The nearest residence is situated approximately 3.6 km north-east of the proposed extraction area, refer **Figure 2** below.  **Figure 2 – Nearest Residence** (figure reprinted from Queensland Globe (2021))
Library and educational institution (including a schools,	The Stanwell State School is situated approximately 4.9 km north west of the proposed extraction area. The nearest library is the Gracemere Library, 13.6 km north east of the proposed extraction area.

Sensitive Receptor	Description and Location
playgrounds, college and university)	
Childcare centre or kindergarten	The nearest childcare centre is situated approximately 20.5 km north east of the proposed extraction area.
School or playground	The Stanwell State School is situated approximately 4.9 km north west of the proposed extraction area.
Hospital, surgery or other medical institution	The nearest medical centre and hospital (Mater Hospital) are situated 19.9 km north east of the proposed extraction area.
Commercial and retail activity	The proposed extraction area is adjacent to commercial land uses such as extractive industry (2.1 km north) activities, and activities associated with the Stanwell Power Station operated by Stanwell Corporation Limited, situated (2.5 km west). The Stanwell Power Station activities are authorised under EA ref. EPPR00708913 and include the following prescribed ERAs: • ERA 64 Threshold (3) - Treating 10ML or more raw water in a day. • ERA 63 Threshold (1) (b)(ii) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of, more than 100 to 1500 EP (equivalent persons) otherwise. • ERA 60 Threshold (1) (d) - Operating a facility for disposing of, in a year, more than 200,000 tonnes. • ERA 14 – Threshold (2)(b) - Generating electricity by using a fuel, other than gas, at a rated capacity of more than 150 Megawatts electrical. • ERA 8 Threshold (3)(1)(c) - Storing more than 500 m^3 of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection. • ERA 7 Threshold (3) - Manufacturing, in a year, a total of 200 tonnes or more of any of agricultural chemical products or chemicals for biological control. The nearest commercial and retail activities are situated in the township of Stanwell, 4.7 km north west of the proposed extraction area.
Protected area or critical area	The Stanwell Power Station Nature Refuge is within the boundary of Lot 44 on SP140243 adjacent to the proposed extraction area. The Rainbow Mountain Nature Refuge is immediately south of the site.

Sensitive Receptor	Description and Location
	 **Figure 3 – Protected Areas** (figure reprinted from Queensland Globe (2021))
Marine park	The Great Barrier Reef Coast Marine Park is situated 58 km east of the proposed extraction area.
Park or garden that is open to the public (whether or not on payment of an amount) for use other than for sport or organised entertainment	The Saint Joseph's Orphanage Memorial Park is situated 4.3 km to north of the proposed extraction area.

2.1.3 Regional Climate

A summary of the regional climate data sourced from the Bureau of Meteorology ('BoM') is provided in **Table 7 – Regional Climatic Statistics**. The annual mean rainfall for this locality is 677.2 mm and majority of rain falls between December and March. Review of the annual 9am and 3pm wind direction versus wind speed shows that the morning winds are generally from the east and predominantly between >= 10 and < 20 km/hr. In the afternoon, winds are generally from the south east and predominantly between >= 10 and < 20 km/hr. Refer to **Plate 4 – Wind Roses of Annual Speed and Direction 9am vs 3pm, Logan City Water Treatment Plant BoM Station 40854** for graphic representations of the wind observations.

Table 4 – Regional Climatic Statistics

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Rainfall (mm)													
Mean	112.5	127.4	99.6	28.0	24.2	40.3	30.9	22.6	22.7	58.0	46.3	101.5	677.2
Temperature (°C)													
Mean min.	22.2	22.2	20.9	18.0	14.3	11.1	9.7	10.8	13.8	17.1	19.6	21.3	16.8
Mean max.	32.0	31.4	30.6	28.8	26.1	23.6	23.3	24.9	27.5	29.7	31.3	32.2	28.5
Wind Speed (km/h)													
Mean 9am wind speed	7.4	6.7	6.7	5.3	5.5	4.9	5.3	5.4	5.6	6.9	7.0	7.0	6.1
Mean 3pm wind speed	14.3	13.3	13.8	12.3	9.7	8.7	9.3	10.9	12.6	13.3	13.4	13.2	12.1

Source:
Rainfall data from Stanwell Power Station BoM Station No.: 39328.
Temperature and wind speed / direction data from Rockhampton Aero BoM Station No.: 39083



Figure 4 – Wind Roses of Annual Speed and Direction 9am vs 3pm Rockhampton Aero BoM Station No.: 39083
(Figures reprinted from *Rose of Wind direction versus Wind speed in km/h (01 Apr 1939 to 11 Aug 2020)* prepared by the Bureau of Meteorology (2020))

2.2 Land

2.2.1 Remnant Vegetation

Refer to **Figure 5 – Remnant Vegetation Mapping** for an illustration of the remnant vegetation mapping over the site, which is mapped as comprising the following Category B Least Concern Regional Ecosystem ('RE') under the *Vegetation Management Act 1999* (VMA):

- RE 11.11.15 (85%) – *Eucalyptus crebra* woodland to open woodland on deformed and metamorphosed sediments and interbedded volcanics.
- RE 11.11.3 (10%) – *Corymbia citriodora*, E. crebra, E. acmenoides open forest on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges.
- RE 11.11.5 (5%) - Microphyll vine forest +/- *Araucaria cunninghamii* on old sedimentary rocks with varying degrees of metamorphism and folding.

The central southern portion of the proposed extraction area is mapped as Category X – Non-remnant vegetation.

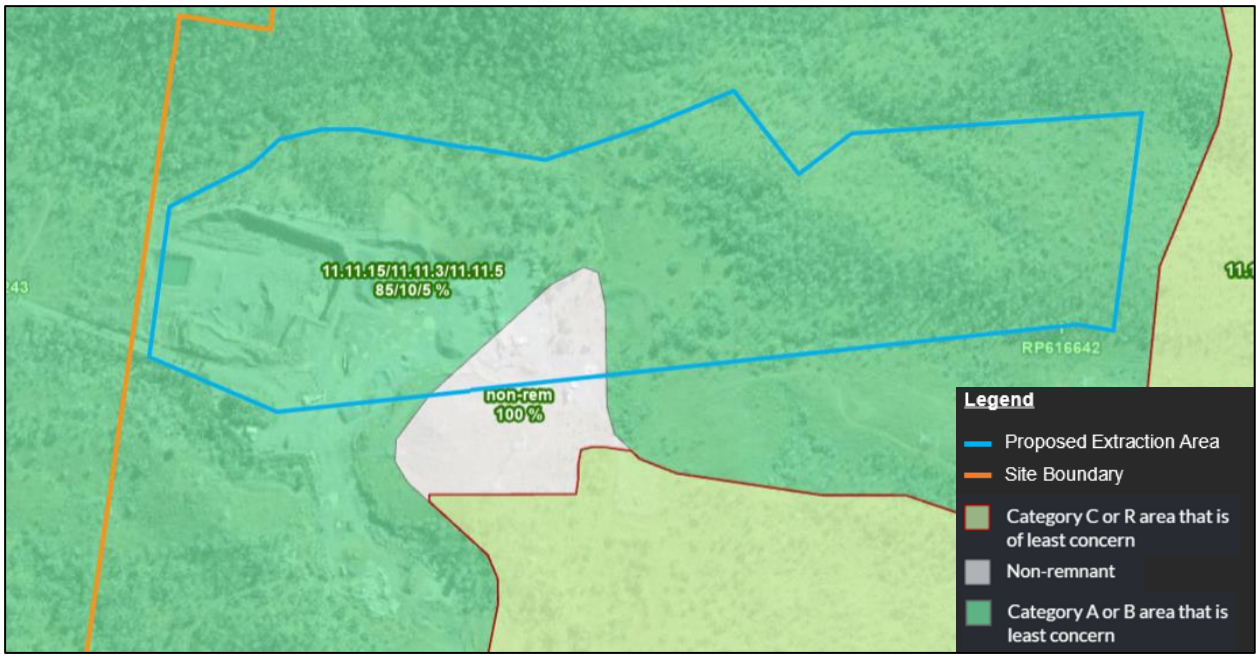


Figure 5 – Remnant Vegetation Mapping
(figure reprinted from Queensland Globe (2021))

2.2.2 Flora Survey Trigger Mapping

The proposed extraction area is mapped on the Flora Survey Trigger Mapping (refer **Figure 6 – Flora Survey Trigger Mapping**) as containing vegetation that is a 'high risk area'. In November 2020, Saunders Havill Group ('SHG') was commissioned to complete a site assessment to provide a baseline in relation to the ecological values of the proposed extraction area inclusive of a flora survey for the purpose of the *Nature Conservation Act 1999* ('NCA'). SHG (2021) concluded the following regarding the findings of the flora survey:

> *No specimens of Cycas megacarpa were detected onsite during comprehensive surveys, allowing for an exemption to be applied for under the NC Act.*

Therefore, the clearing of the proposed extraction area is exempt for the purposes of the NCA.

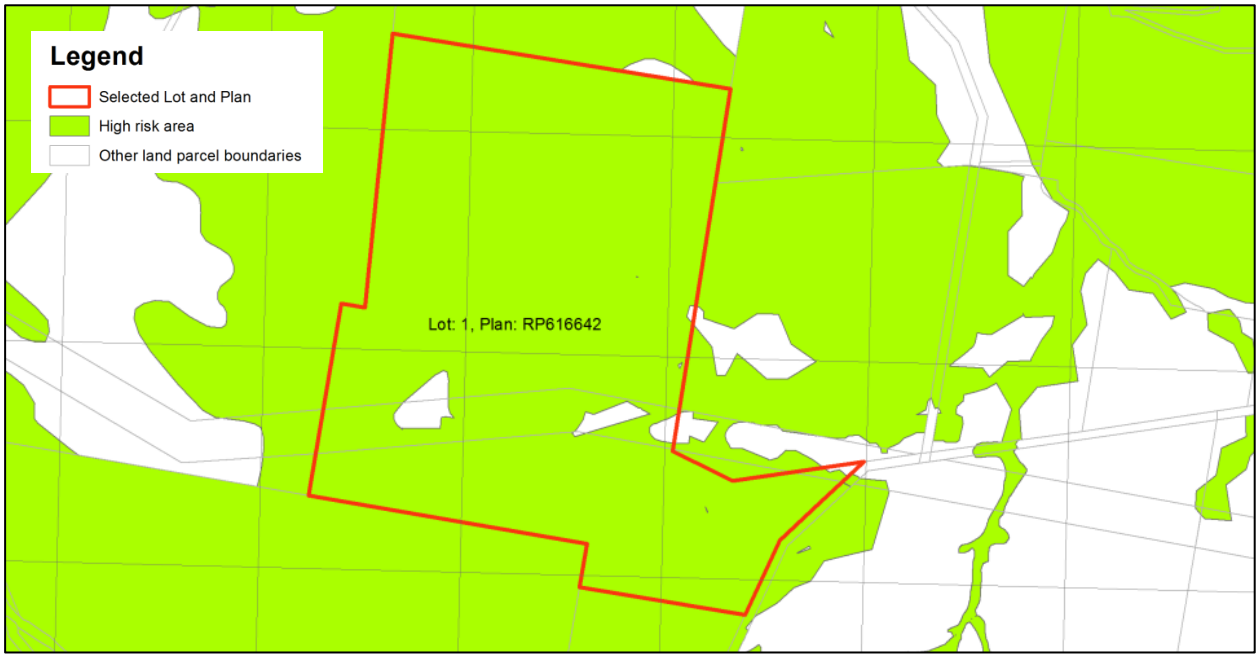


Figure 6 – Flora Survey Trigger Mapping
(figure reprinted from *Protected Plants Flora Survey Trigger Map* (DES 2020))

2.2.3 Matters of State Environmental Significance

Figure 7 – MSES Mapping provides an illustration of the above mapping. Review of the Matters of State Environmental Significance ('MSES') relevant to the site has identified that the proposed 'extraction area is mapped as containing:

- MSES regulated vegetation [essential habitat].
- MSES wildlife habitat [endangered or vulnerable].



Figure 7 – MSES Mapping
(figure reprinted from Queensland Globe (2021))

SHG completed detailed site surveys to ground-truth potential ecological values within the proposed extraction area. SHG (2021, p. 6) stated the following in relation to MSES at the site:

> *The action proposes to remove vegetation which is currently mapped as MSES Wildlife Habitat and VM Essential Habitat for the flora species, Cycas megacarpa (Figure 3). Additionally, this area of mapped MSES is also mapped as a high-risk trigger area under the NC Act, requiring assessment across the site adhering to the Flora Survey Guidelines – Protected Plants. These surveys were completed on 17th November 2020 by a suitably qualified person (see Appendix A) with details reported within a Protected Plant species report for the site. No specimens of Cycas megacarpa were detected onsite during comprehensive surveys, allowing for an exemption to be applied for under the NC Act. The fulfillment of these survey requirements, with no specimens detected onsite, suggests the clearing of this vegetation will avoid impacting on this particular Matter of State Environmental Significance (MSES).*

As such, impacts to MSES are understood to be not applicable to the development within the proposed extraction area.

The proposed extraction area is adjacent to a MSES regulated vegetation [defined watercourse], which is categorised as a Stream Order 1 watercourse for the purpose of the VMA, and therefore the defining distance is 10 m (DNRME 2020). The proposed extraction area has been situated to create a 20 m to 50 m buffer to this watercourse north of the proposed extraction area.

2.2.4 Matters of Local Environmental Significance

The site is mapped as being subject to the Matters of Local Environmental Significance ('MLES') – General overlap in accordance with the *Rockhampton Regional Planning Scheme 2015*, refer to **Figure 8 – MLES General Mapping**.

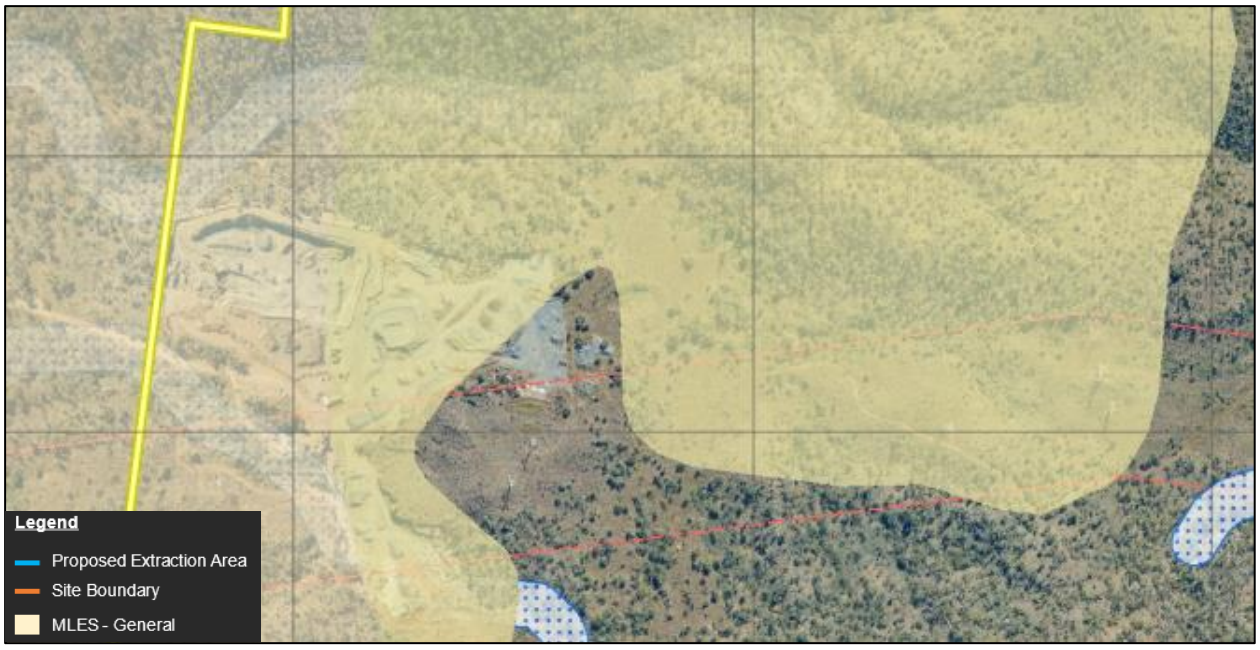


Figure 8 – MLES General Mapping
(figure reprinted and adapted from *OM - Biodiversity Areas - MLES* mapping provided by Rockhampton Regional Council (2021))

SHG (2021, p.5-7) concluded the following generally in relation to ecological values at the site:

> *The current EA (EPPR00424513) is held across the entire Lot however, clearing is proposed for a minimal amount of this area. Presently, Lot 1 on RP616642 is predominantly mapped as remnant or regrowth vegetation with the exception of two small polygons of Category X non-remnant vegetation, one of which is included within the proposed clearing area (see Figure 3). In addition, the proposed clearing adjoins an easement parcel, which has been previously cleared and has the potential to be cleared at any time.*
>
> *Access roads to the site currently exist, with the clearing proposing to extend a pre-existing extraction area. Locating the proposed action in this area minimises the need to clear additional areas for new access roads. Clearing within the proposed polygon maintains extensive remnant and mature regrowth vegetation to the north of the impact site, within 1RP616642, which continues to facilitate habitat connectivity east-west towards the conservation reserves as well as north-south through the site.*
>
> *….Due to the extensive surveys being conducted onsite in accordance with the Queensland Flora Survey Guidelines - Protected Plants, failing to detect the species in addition to assessment of significant residual impacts to C. megacarpa (for which essential habitat is mapped), a significant residual impact is not expected to occur due to the proposed action.*

As such, impacts to ecological values within areas mapped as MLES – General are understood to be avoided for the proposed development within the proposed extraction area.

2.2.5 Topography

Elevations range between 120 m AHD at the lowest point in the north western corner of the proposed extraction area, to approximately 175 m AHD in the eastern portion, refer to **Figure 9 – Contour Mapping**. The steepest slope gradient within the proposed extraction area is approximately 16 % on the slopes of the hill summit (note that this feature will be subject to extraction).

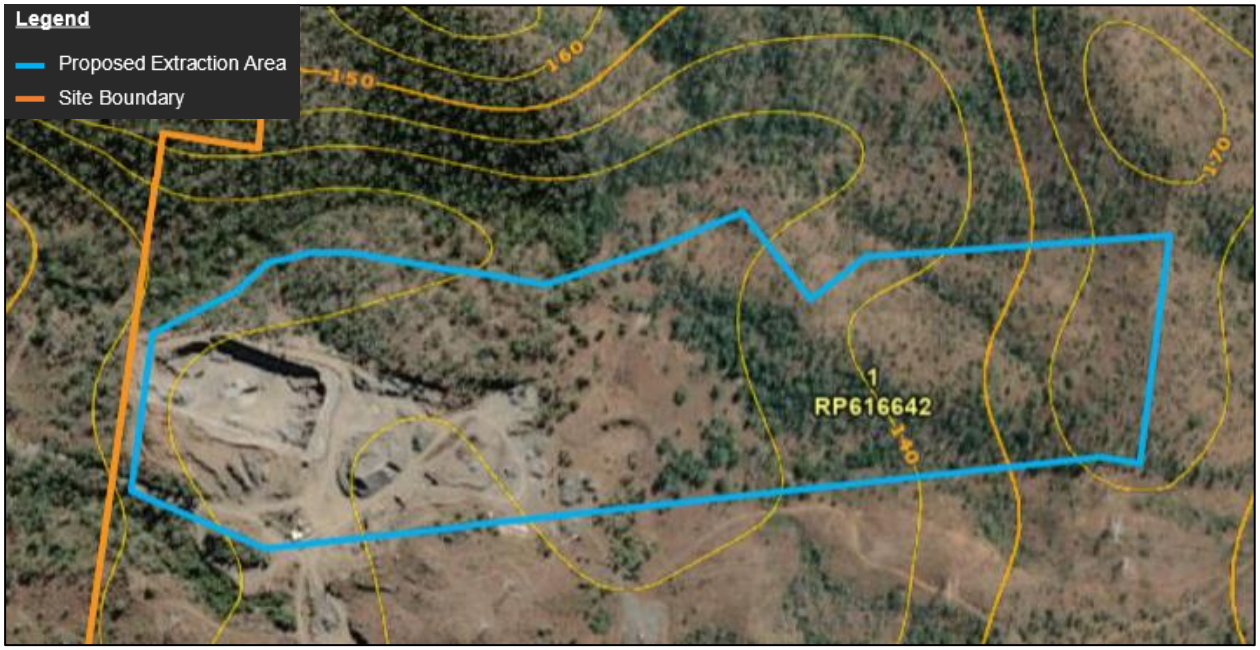


Figure 9 – Contour Mapping
(figure reprinted from Queensland Globe (2021))

2.2.6 Geology

2.2.6.1 Regional Geology

The rock units which dominate the Stanwell region are the Rockhampton Limestone Group. This group was formed in the early Carboniferous during a period of prolonged ocean transgression and are ooilitic to fossiliferous limestones dipping 40 degrees to the south-east. Zones of skeletal limestone, disrupted by a series of faults in the Mt Misery area, display the location of ancient coral reefs. Superseding these sedimentary deposits are the Permian Moah Creek beds and the Dinner Creek Conglomerate. The Moah Creek beds are of mudstone and sandstone with rounded Dinner Creek conglomerate. This progressive morphology suggests the formation of sedimentary in-fill of the basin as the ocean receded and surface waters were dispatched during the Permian. In the east and extending to the Stanwell area the Bouldercombe Igneous Complex dominates. This intrusive formation comprises gabbro, diorite, tonalite and quartz monzodiorite and is the exposed remnant of a Triassic Batholith; the distal regions of which make up the quarry site's dioritic resources.

2.2.6.2 Site Geology

The site geology consists of dark grey to speckled white and green-black fine to medium grained dioritic rock complicated by other robust amphibole rich and quartzo-feldspathic sub-types. Accordingly, and following from continued petrographic analysis and site observations, a definition as Quartz Micro-diorite best accommodates the textural and mineral variations observed. Attending sparsely porphyritic tonalite and monzogranitic rock types are also recorded with accompanying finely recrystallised partial melts juxtaposed against medium grained dioritic to andesitic material. This complexity is the result of generational remelting, injection and recrystallization. Importantly, and aside from surface weathering which accounts for the site's overburden, the bulk of the site's rock displays a consistent weathering and alteration profile with a collectively intermediate igneous chemistry with sub-type specifics largely regarded as academic and without significant practical implications. Thick and cross bedded, fine to coarse-grained quartzose sandstone occupies local depressions and the flood beds of Quarry Creek are filled with silt and mudstone.

2.2.7 Contaminated Land

A review of search results of the Environmental Management Register ('EMR') and Contaminated Land Register ('CLR') has confirmed that Lot 1 on RP616642 on which the proposed extraction area is situated is not currently listed on either the EMR or CLR. A copy of the search results is included as **Attachment 2 – EMR / CLR Search Results**.

2.2.8 Acid Sulphate Soil

Review of the Acid Sulfate Soils ('ASS') mapping (Queensland Globe 2021) has confirmed that the site is not located within, or near, an area where ASS have previously been identified, or within a prospective land zone containing ASS. As elevations over the site are generally above 120 m AHD, presence of ASS is considered very unlikely.

2.3 Water

2.3.1 Watercourses

The proposed extraction area is not mapped as containing any watercourses or ephemeral gullies under either the VMA or the *Water Act 2000* (Water Act), refer to **Figure 10 – State Watercourse Mapping**. The proposed extraction area is adjacent to a Stream Order 1 watercourse (drainage feature) which conjoins with other drainage features west of the extraction area prior to entering Quarry Creek, a Stream Order 3 watercourse 200 m downstream of the site.

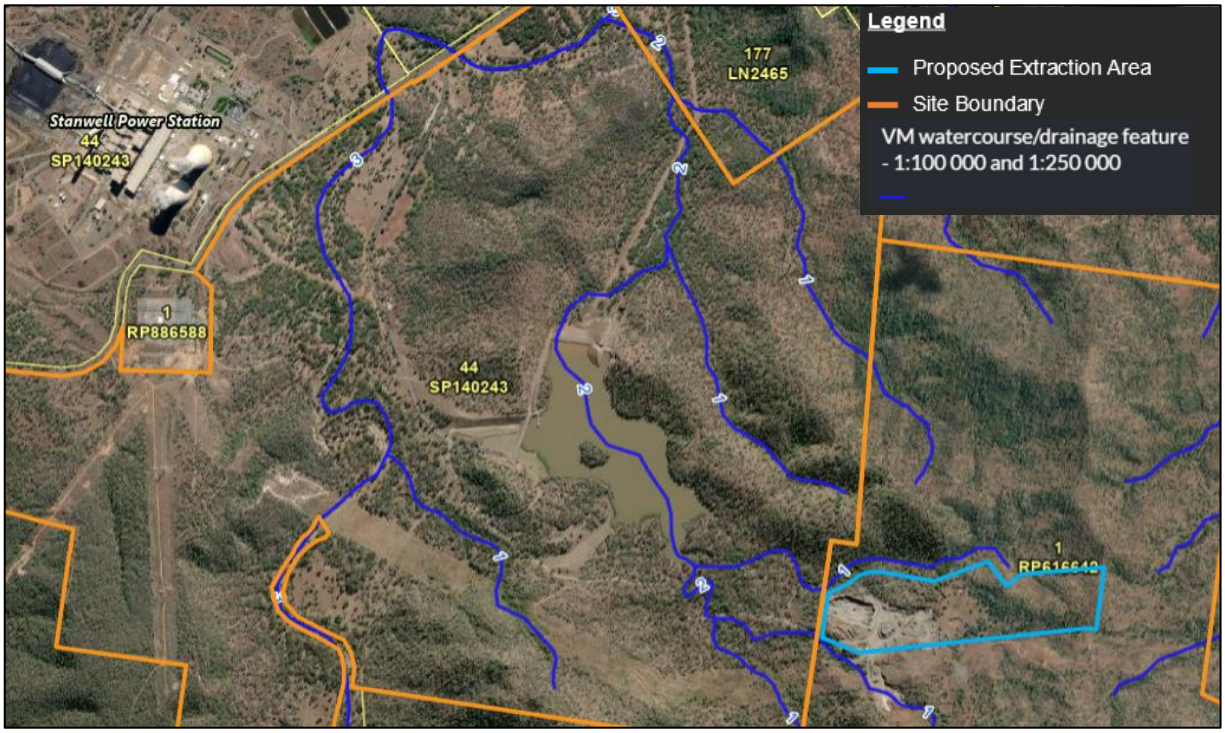


Figure 10 – State Watercourse Mapping
(figure reprinted from Queensland Globe (2021))

2.3.2 Water Quality Objectives and Environmental Values

The proposed extraction area is within the Fitzroy River Sub-Basin of the broader Fitzroy River Basin (Basin 130). The receiving environments for the site include the waters of Quarry Creek, which at downstream locations, are influenced by activities associated with the release of waters from the Stanwell Power Station, agricultural land uses and existing extractive industry activities.

The Water Quality Objectives ('WQOs') for the fresh waters of the Fitzroy River Sub-Basin prescribed under the *Environmental Protection (Water) Policy 2009: Fitzroy River Sub-basin Environmental Values and Water Quality Objectives Basin No. 130 (part), including all waters of the Fitzroy River Sub-basin* (EHP 2011) are summarised in **Table 5 – Water Quality Objectives: Fitzroy River Sub-Basin Freshwaters**.

Table 5 – Water Quality Objectives: Fitzroy River Sub-Basin Freshwaters

Quality Characteristic	WQO
Ammonia N	< 20 µg/L
Oxidised N	< 60 µg/L
Organic N	< 420 µg/L

Quality Characteristic	WQO
Total Nitrogen	< 500 µg/L
Chlorophyl a	< 5.0 µg/L
Dissolved Oxygen	85-110% Saturation
Turbidity	< 50 NTU
Suspended Solids	< 85 mg/L
pH	6.5 – 8.5
Conductivity (base flow / high flow)	< 445 µS/cm / < 250 µS/cm
Sulfate	< 15 mg/L

In accordance with the site's existing EA, the quality requirements for site water releases are provided in condition 1WT4 are as follows:

> *….the release to waters must not:*
> *1. have any other properties at a concentration that is capable of causing environmental harm*
> *2. produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other visually objectionable matter.*

The adjacent Stanwell Power Station, which is permitted to release waters downstream within waters of Quarry Creek, are summarised in **Table 6 – Stanwell Power Station: Release Quality Characteristic Limits**.

Table 6 – Stanwell Power Station: Release Quality Characteristic Limits

Quality Characteristic	WQO
Suspended Solids	<100 mg/L, 100 mg/L, except when the Suspended Solids level at Monitoring Point 3 (MP3) exceeds 100 mg/L
pH	6.5 – 9.6
Total Dissolved Salts	<1,450 mg/L
Dissolved Oxygen	< 2mg/L
Total Residual Oxidant (as Cl)	< 0.05 mg/L
Total Chloride	< 400 mg/L

Table notes: reprinted and adapted from Table 2 - Release Quality Characteristic Limits of EA ref. EPPR00708913.

2.3.3 Flooding

The proposed extraction area is mapped as being subject to 1% AEP (Annual Exceedance Probability) (1 in 100-year event) flood levels and 'Extreme basin events flood levels' in accordance with Queensland Globe (2021) mapping, refer to **Figure 11 – State Flood Mapping**. However, the site is not mapped as being subject to flooding in accordance with the *Rockhampton Regional Planning Scheme 2015* and therefore it is not anticipated that the site will be subject to flooding.

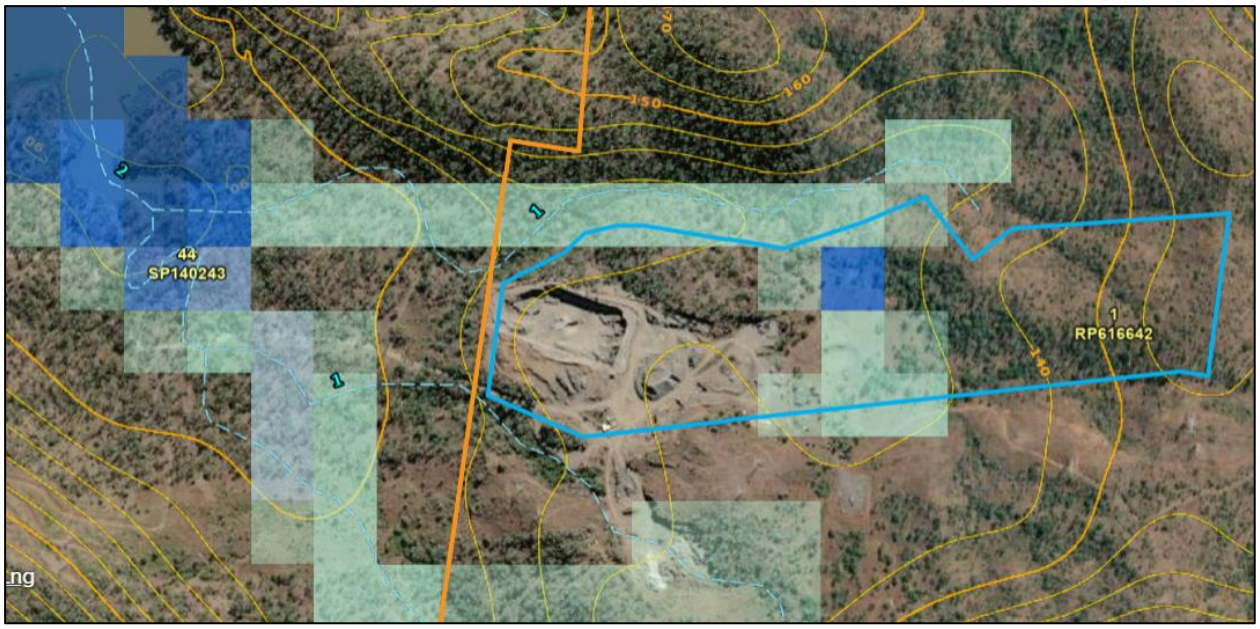


Figure 11 – State Flood Mapping
(figure reprinted from Queensland Globe (2021))

2.4 Wetlands

There are no mapped wetlands inclusive of; VMA wetlands, MSES declared high ecological value waters (wetland), MSES high ecological significance wetlands and Wetlands of high ecological significance within a 10 km radius of the proposed extraction area.

2.5 Groundwater

Local groundwater information has been sourced from Queensland Globe (2021), which shows that there is one registered sub-artesian bore located within the site boundary directly north of the proposed extraction area. The bore was likely installed adjacent to a stream, suggesting groundwater levels would be elevated. The details for this bore location are summarised in **Table 7 – Registered Bore Groundwater Data Summary**. An illustration of the location of these bores in relation to the site is provided in **Figure 12 – Local Groundwater Bore Locations**.

Table 7 – Registered Bore Groundwater Data Summary

Reg Number	Lat / Long	Quality	Geology	Date / SWL	Groundwater Depth (mAHD)*
122140	-23.524, 150.348	EC = 530 µS/cm	Lorray Formation Basalt	29/05/2002 - 7.5 m	~125.5

Notes:
SWL = Standing Water Level
*Based on elevation of bore, subtracting SWL.



Figure 12 – Local Groundwater Bore Locations
(figure reprinted from Google Earth (2020))

The site is not mapped under Queensland Globe (2021) as containing any Groundwater Dependant Ecosystems ('GDEs').

2.6 Noise

Nearby noise sensitive places are summarised in **Table 3 – Nearby Sensitive Receptors**, with the nearest dominant land use being associated with the Stanwell Power Station (2.5 km west). A dwelling is situated 4.5 km east of the proposed extraction area. While no noise assessment has been completed for the purpose of this EAR, the Acoustic Quality Objectives for commercial and residences prescribed under the *Environmental Protection (Noise) Policy 2019* (EPP (Noise)) for these receptors are summarised in **Table 8 – Acoustic Quality Objectives**. It must be noted that these are provided as guidance only. Due to the isolated and pre-existing nature of the activities, the Acoustic Quality Objectives are not likely to be applicable to the site activities.

Table 8 – Acoustic Quality Objectives

Sensitive Receptors	Time of Day	Acoustic Quality Objectives (measured at the receptor) dB(A)			Environmental Value
		$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$	
Residences (outdoors)	Daytime and evening	50	55	65	Health and wellbeing.
Residences (indoors)	Daytime and evening	35	40	45	
	Night-time	30	35	40	
Commercial and retail activity (indoors)	When the activity	45			Health and wellbeing, in relation to the ability to converse.

2.7 Air

Nearby sensitive receptors are summarised in **Table 3 – Nearby Sensitive Receptors**. No baseline assessment of air quality has been undertaken for the purpose of this EAR; however, the site is a pre-existing extractive industry activity, situated in a rural location, adjacent to the Stanwell Power Station and other pre-existing extractive industries activities. As such, air quality is anticipated to be influenced by these localised activities.

Typical emissions from extractive industry activities are PM_{10} (particles with a diameter of 10 micrometres or less) and dust deposition (recorded as Total Suspended Particles (TSP)). In accordance with the *Environmental Protection (Air) Policy 2019* (EPP (Air)), the Air Quality Objectives for these two parameters are shown in **Table 9 – Air Quality Objectives**.

Table 9 – Air Quality Objectives

Indicator	Environmental Value	Air Quality Objective	Period	Days
PM10	Health and Wellbeing	50 µg/m3	24 hours	5 days per year
TSP	Health and Wellbeing	90 µg/m3	1 year	-

3. Potential Environmental Impacts and Risks

3.1 Purpose of Assessment

The purpose of this assessment is to determine the extent to which the proposed site activities will achieve the environmental objective and performance outcomes nominated in Schedule 8, Part 3, Division 1 of the EP Reg. A risk-based approach has been utilised, with the source activities and potential impacts to environmental values utilised to determine the management strategies, if required, to mitigate these impacts to ensure the performance outcomes can be achieved.

3.2 Risk Assessment Methodology

This risk assessment methodology has been adopted from the process for risk management as set out in Clause 6 of the *AS ISO 31000:2018 Risk management - Guidelines* (Standards Australia Limited 2018). The risk assessment follows the following process:

- Risk identification (source activity and potential impact).
- Risk Analysis (risk level = likelihood x consequence).
- Risk Evaluation (commentary on risk).

The risk treatment outlines the controls / management measures that can be implemented to reduce the level of risk to as low as reasonably possible.

The risk analysis qualitatively estimates the level of risk based on the likelihood of an environmental impact or event occurring (**Table 10 – Definitions of Likelihood**), and the consequences of the occurrence (**Table 11 – Definitions of Consequence**).

Table 10 – Definitions of Likelihood

Rating	Descriptor	Score
Rare	May occur only in exceptional circumstances	1
Unlikely	Could occur but doubtful	2
Possible	Might occur at some time in the future	3
Likely	Will probably occur	4
Almost Certain	Is expected to occur in most circumstances	5

Table 11 – Definitions of Consequence

Rating	Descriptor	Score
Negligible	Impacts not requiring any treatment or management action	1
Minor	Nuisance or insignificant environmental harm requiring minor management action	2
Moderate	Serious environmental impacts, readily manageable at low cost	3
Major	Substantial environmental impacts, manageable but at considerable cost and some disruption	4
Severe	Severe environmental impacts with major consequent disruption and heavy cost	5

The consequence and likelihood scores are plotted on the risk vs consequence matrix (**Table 12 – Risk Assessment Matrix**) and the final risk level assigned is a product of the likelihood and consequence scores, which equals the magnitude of the impacts. The higher the risk score, the higher the priority is for management.

Table 12 – Risk Assessment Matrix

Likelihood		Consequence				
		Negligible	Minor	Moderate	Major	Severe
		1	2	3	4	5
Almost Certain	**5**	5 Medium	10 High	15 High	20 Very High	25 Very High
Likely	**4**	4 Low	8 Medium	12 High	16 High	20 Very High
Possible	**3**	3 Low	6 Medium	9 Medium	12 High	15 High
Unlikely	**2**	2 Low	4 Low	6 Medium	8 Medium	10 High
Rare	**1**	1 Low	2 Low	3 Low	4 Low	5 Medium

Table 13 – Indicative Management Option for Each Risk Assessment Rating describes the possible actions required for each risk assessment rating.

Table 13 – Indicative Management Option for Each Risk Assessment Rating

Risk Rating	Risk Rating Scores	Indicative Management Option
Very High	**17 – 25**	Manage by implementing site management and emergency procedures, plant design controls and regular monitoring.
High	**10 – 16**	Manage by implementing site management procedures, specific monitoring and may require some operation/plant design controls.
Medium	**5 – 9**	Manage by implementing specific monitoring or response procedures.
Low	**1 – 4**	Manage by routine procedures, unlikely to need specific application of resources.

3.3 Inherent and Residual Environmental Risk Assessment

Activities associated with the Material Change of Use application which have the potential to cause environmental harm and/or nuisance and the potential impacts have been identified and tabulated. The inherent risk of the impacts occurring, and the residual risk following the implementation of management strategies has then been assessed. Refer to **Table 14 – Assessment of Environmental Risk** for the assessment.

A Site Based Management Plan ('SBMP') (Doc ref. 1662_610_001) has been developed for the site to manage potential environmental impacts, and these documents are referenced where relevant in the risk assessment provided in **Table 14**.

Table 14 – Operational Assessment of Environmental Risk

Environmental Aspect	Environmental Objective [1]	Performance Outcome	Source Activity	Potential Impact	Inherent Risk Rating [2]	Control / Management Measures	Residual Risk Rating [3]
Air	The activity will be operated in a way that protects the EVs of air.	• Fugitive emissions of contaminants from storage, handling and processing of materials and transporting materials within the site are prevented or minimised. • Contingency measures will prevent or minimise adverse effects on the environment from unplanned emissions and shut down and start up emissions of contaminants to air. • Releases of contaminants to the atmosphere for dispersion will be managed to prevent or minimise adverse effects on environmental values.	• Clearing of vegetation and topsoil / overburden ahead of the extraction activity. • Stockpiling of topsoil and overburden. • Extraction and handling of raw materials (e.g., transfer of materials, processing, blending, stockpiling, transportation). • Vehicle movements on unsealed roads and access tracks.	Emission of dust to air impacting nearby sensitive receptors.	3 x 3 = 9 (**Medium**)	In the absence of control measures, potential incidents associated with air emissions impacting nearby sensitive receptors is scored medium due to the setting of the site a very rural locality with nearby heavy industry (Stanwell Power Station) and pre-existing extractive industry activities. To site's SBMP contains an Air Quality Management Plan (Section 4,1) which provides measures to minimise potential for air quality impacts. In addition, condition PMA001 (A1) MOC (DES 2019) if applied to the EA would provide for regulation of air emissions associated with the site activities. Provided that AMCOR implement the management measures outlined in the SBMP, and observe the EA requirements, the environmental objective for 'Air' is likely to be achieved. Residual risk is scored low as the likelihood of an incident occurring, and its consequences, are reduced through the implementation of control measures.	2 x 2 = 4 (Low)
Water	The activity will be operated in a way that protects the EVs of water.	• the storage and handling of contaminants will include effective means of secondary containment to prevent or minimise releases to the environment from spillage or leaks. • contingency measures will prevent or minimise adverse effects on the environment due to unplanned releases or discharges of contaminants to water. • the activity will be managed so that stormwater contaminated by the activity that may cause an adverse effect on an environmental value will not leave the site without prior treatment. • the disturbance of any acid sulfate soil, or potential acid sulfate soil, will be managed to prevent or minimise adverse effects on environmental values. • any discharge to water or a watercourse or wetland will be managed so that there will be no adverse effects due to the altering of existing flow regimes for water or a watercourse or wetland. • the activity will be managed so that adverse effects on environmental values are prevented or minimised.	• Clearing of vegetation and topsoil. • Stockpiling of topsoil and overburden. • Extraction and handling of raw materials (e.g., transfer of materials, processing, blending, stockpiling, transportation).	Release of contaminated water to the receiving environment.	4 x 3 = 12 (**High**)	Stormwater runoff will interact with disturbed areas created through the development of the proposed extraction area. Inherent risks to off-site waters are conservatively scored high in the absence of any environmental controls to mitigate these risks. To manage potential impacts to waters from the proposed extraction area, a Water Quality Management Plan has been incorporated into the site's SBMP (refer to Section 4.2 of SBMP). Provided that the management measures outlined in the SBMP are implemented, and the EA conditions complied with, the environmental objective for 'Water' is likely to be achieved. The residual risk score is reduced to medium based on a possible likelihood and a moderate consequence. Review of ASS mapping has confirmed that the site is not located within, or near, an area where ASS have previously been identified, or within a prospective land zone containing ASS. As elevations are generally above 120 m AHD, presence of ASS is considered very unlikely, and no management measures are considered necessary.	2 x 3 = 6 (**Medium**)
Wetlands	The activity will be operated in a way that protects the environmental values of wetlands.	The activity will be managed in a way that prevents or minimises adverse effects on wetlands.	• Clearing of vegetation and topsoil. • Excavation of the 'overburden storage and stockpile area'. • Storage and handling of materials within the 'overburden storage and stockpile area'.	Release of contaminants to, or physical damage of, nearby wetlands.	2 x 2 = 4 (**Low**)	The site is not mapped as containing any wetlands; therefore, direct impacts to wetlands are unlikely. The nearest mapped wetland is situated outside of an approximately 10 km radius of the proposed extraction area. As a result, the inherent risk of impacts to wetlands is scored low. Low inherent risks are able to be managed by routine procedures and are unlikely to need specific application of resources. The residual risk is unchanged and remains low.	2 x 2 = 4 (**Low**)

Environmental Aspect	Environmental Objective [1]	Performance Outcome	Source Activity	Potential Impact	Inherent Risk Rating [2]	Control / Management Measures	Residual Risk Rating [3]
Groundwater	The activity will be operated in a way that protects the environmental values of groundwater and any associated surface ecological systems.	The activity will be managed to prevent or minimise adverse effects on groundwater or any associated surface ecological systems.	• Clearing of vegetation and topsoil. • Excavation of the 'overburden storage and stockpile area'. • Storage and handling of materials within the 'overburden storage and stockpile area'.	Release of contaminants to groundwater.	3 x 3 = 9 (**Medium**)	Based on available aquifer depth data within the on-site bore, groundwater has been recorded at a depth of 125.5 m AHD (approximation only) (-7.5 m SWL). The bore was likely installed adjacent to a stream, suggesting groundwater levels would be elevated. There is a potential for interception of groundwaters during the site development. Unmitigated, the potential for indirect impacts through release of contaminants which have the potential to be transported to groundwaters is scored medium, based on a possible likelihood and a moderate consequence. The Water Quality Management Plan (Section 4.2 of the SBMP) includes measures for capture and treatment of surface waters that may interact with potential contaminants at the site that could impact groundwater. The SBMP also includes a Hydrocarbon and Chemical Management Plan that provides measures for management of other potential groundwater contaminants, refer to Section 4.3 of the SBMP. Indirect impacts to groundwater from the site activities could readily be managed through controls put in place for management of stormwater (see 'Water') and hydrocarbon and chemical handling (see 'Land'). In addition, 'Water' for the purpose of the MOC is taken to include groundwater; therefore, the application of the conditions contained in the MOC will regulate impacts to groundwater. Provided AMCOR implement the SBMP, potential for indirect impacts to groundwater will be reduced, and the residual risk is reduced to a lower score based on a decreased likelihood of an event occurring, The risk is reduced to a lower score however remains medium, which will require ongoing management through the implementation of the SBMP.	2 x 3 = 6 (**Medium**)
				Impacts to GDEs.	1 x 1 = 1 (**Low**)	The proposed extraction area is not mapped as containing GDEs in accordance with Queensland Globe (2021). The inherent risk of impacts to GDEs is therefore scored low, which does not require any specific application of control measures, and residual risk remains low.	1 x 1 = 1 (**Low**)

Environmental Aspect	Environmental Objective [1]	Performance Outcome	Source Activity	Potential Impact	Inherent Risk Rating [2]	Control / Management Measures	Residual Risk Rating [3]
Noise	The activity will be operated in a way that protects the EVs of the acoustic environment.	The release of sound to the environment from the activity is managed so that adverse effects on EVs including health and wellbeing and sensitive ecosystems are prevented or minimised.	• Clearing of vegetation and topsoil / overburden ahead of the extraction activity. • Stripping and stockpiling of topsoil, subsoils and overburden. • Extraction and handling of materials (e.g., transfer of materials, stockpiling, transportation). • Screening and processing of the materials. • Vehicle movements on unsealed roads and access tracks. • Plant and equipment use, including reverse beepers. • Radio / UHF use. • Alarms.	Noise nuisance for nearby noise sensitive receptors.	3 x 3 = 6 (**Medium**)	In the absence of any noise management measures, the site activities have the potential to influence the noise EVs of the locality. Due to the pre-existing nature of the site activities, and the site setting adjacent to the Stanwell Power Station and other pre-existing extractive industry activities, the consequence is conservatively assessed as moderate resulting in an inherent risk of medium. The site's SBMP includes a Noise Management Plan (Section 4.4) which provides control measures to minimise noise emissions from the site activities. Provided that AMCOR implement control measures for potential noise impacts as outlined in the SBMP, and observe the EA requirements, the environmental objective for 'Noise' is likely to be achieved. Residual risk is reduced to low as the likelihood and consequence of an incident involving noise nuisance is reduced through the implementation of the above measures.	2 x 2 = 4 (**Low**)
Waste	Any waste generated, transported, or received as part of carrying out the activity is managed in a way that protects all environmental values.	• Waste generated, transported or received is managed in accordance with the waste and resource management hierarchy in the *Waste Reduction and Recycling Act 2011*. • If waste is disposed of, it is disposed of in a way that prevents or minimises adverse effects on environmental values.	• Vegetation clearing. • Storage and disposal of residual waste (i.e., general and regulated waste).	Improper disposal of wastes.	3 x 4 = 12 (**High**)	The DA relates to the extension of the extraction area and will not change the nature or volumes of wastes generated by the existing site activities. Types of waste that may be generated at the quarry include, but are not necessarily limited to, the following: • Regulated wastes (e.g., batteries, oil filters, waste oil/hydrocarbons and containers, oil/water emulsions and tyres). • Scrap metal and used or faulty parts and equipment. • General waste such as food waste, packaging and consumables. • Green waste. In the absence of control measures, potential for impacts associated with improper disposal of wastes is inherently scored high. The Waste Management Plan included as Section 4.6 of the SBMP details measures for management of waste at the site, with reference to the requirements of the *Waste Reduction and Recycling Act 2011* (WRR Act). In addition, condition PMG038 (WS1) of the MOC (DES 2019) if applied to the EA would enable regulation of impacts associated with waste. Provided AMCOR implement the measures outlined in the SBMP, and comply with the requirements of the EA, the residual risk of a potential incident involving waste is reduced, and the environmental objective for 'Waste' is likely to be achieved.	2 x 2 = 4 (**Low**)

Land	The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.	• Activities that disturb land, soils, subsoils, landforms and associated flora and fauna will be managed in a way that prevents or minimises adverse effects on the EVs of land.
		• Areas disturbed will be rehabilitated or restored to achieve sites that are—
		  ○ safe to humans and wildlife; and
		  ○ non-polluting; and
		  ○ stable; and
			Handling of chemicals and fuels on-site.	Release of hydrocarbons and fuels to land.	3 x 4 = 12 (**High**)	In the absence of controls the inherent risk of handling fuels and chemicals is high due to an increased likelihood of potential release if handling and storage activities are unmanaged. Although it must be noted that the DA relates to an extension of the resource area only and will not result in a change in the nature or volumes of hydrocarbons and chemicals that may be present at the site.
						
						A Hydrocarbon and Chemical Management Plan (refer to Section 4.3 of the SBMP) has been incorporated into the SBMP which provides management measures for handling and storage of hydrocarbons and chemicals to reduce the potential impacts to land associated with spills and/or leaks.
							2 x 3 = 6 (**Medium**)

Environmental Aspect	Environmental Objective [1]	Performance Outcome	Source Activity	Potential Impact	Inherent Risk Rating [2]	Control / Management Measures	Residual Risk Rating [3]
		○ able to sustain an appropriate land use after rehabilitation or restoration. • The activity will be managed to prevent or minimise adverse effects on the environmental values of land due to unplanned releases or discharges, including spills and leaks of contaminants. • The application of water or waste to the land is sustainable and is managed to prevent or minimise adverse effects on the composition or structure of soils and subsoils.				Provided AMCOR implements the measures outlined in the SBMP, the residual risk is reduced to a lower level as the likelihood and consequence of an incident occurring is reduced through the implementation of the management measures outlined in the SBMP. The residual risk is scored medium, and ongoing management in accordance with the SBMP will be required to ensure risk is as low as reasonably possible.	
			Clearing of vegetation ahead of extraction.	Unauthorised impacts to protected species as a result of site activities.	2 x 2 = 4 (**Low**)	Clearing of vegetation ahead of extraction is required in order to access the extractive resources. SHG (2021) completed a site survey in November 2020 which confirmed that MSES and species protected under the NCA are not present within the proposed development area. Inherent risk of impacts to protected species is scored low based on the finding of the SHG (2021) assessments. The DA includes an application for an Operational Work – Development Permit for Vegetation Clearing. Once granted, clearing of least concern vegetation is to be carried out in accordance with this statutory approval, which will mitigate unauthorised impacts to protected flora species.	2 x 2 = 4 (**Low**)
			Post-closure implementation and management of the site rehabilitation.	Failure to achieve rehabilitation milestones in disturbance areas at the cessation of the activities.	3 x 4 = 12 (**High**)	In the absence of management measures to assist in site rehabilitation, landforms created through the extraction activities have the potential to impact upon environmental values of the surrounding areas. Inclusion of the conditions PML004 (L2) and PML005 (L3) of the MOC (DES 2019) will enable regulation of rehabilitation for the proposed extraction area. The SBMP includes a Rehabilitation Management Plan (refer to Section 4.8 of the SBMP). Provided that AMCOR implement the SBMP, and observe the EA requirements, the environmental objectives for 'Land' are likely to be achieved. Residual risk is reduced to a lower level as the likelihood of failure of final rehabilitated landforms is reduced through the implementation of these measures. With future planning and implementation of successful rehabilitation, the likelihood of failure is reduced; however, the consequence remains the same, which result in a residual risk rating of medium.	2 x 3 = 6 (**Medium**)

Notes:
1. Environmental Objectives and Performance Outcomes have been reprinted from Schedule 8, Part 3, Division 1 of the EP Reg
2. "Inherent risk" is the level of risk that exists if the impacts go unmitigated.
3. "Residual risk" is the risk that remains after implementation of the proposed control / management measures.

4. Concluding Remarks

The EAR has been prepared to address the EA application requirements as outlined in Section 125 of the EP Act.

The highest level of residual risk has been calculated as medium. Ongoing management of the site will be required in accordance with the management measures provided in the site's SBMP, and through compliance with the EA conditions, to ensure that the potential risk associated with environmental impacts identified is reduced to as low as reasonably possible.

The EMP and SMP have been developed to provide written procedures regarding the measures for the management of potential environmental impacts from the site activities, with reference to the risk assessment provided in **Table 14**. In addition, it is proposed that the MOC are applied to enable regulation of environmental impacts.

Reference

Bureau of Meteorology (2020/2021*). Climate Data Online*. Accessed April 26, 2021 via http://www.bom.gov.au/climate/data/

DES (Department of Environment and Science, (2019). *Model operating conditions—ERA 16—Extractive and screening activities.* Accessed April 26, 2021 via https://environment.des.qld.gov.au/__data/assets/pdf_file/0026/89144/pr-co-extraction-and-screening.pdf

DNRME (Department of Natural Resources, Mines and Energy), (2020). *General guide to the vegetation clearing codes.* Accessed April 23, 2021 via https://www.resources.qld.gov.au/__data/assets/pdf_file/0006/1447098/general-guide-vegetation-clearing-codes.pdf

EHP (Department of Environment and Heritage Protection). (2011). *Environmental Protection (Water) Policy 2009: Fitzroy River Sub-basin Environmental Values and Water Quality Objectives Basin No. 130 (part), including all waters of the Fitzroy River Sub-basin.* Accessed April 26, 2021 via https://environment.des.qld.gov.au/__data/assets/pdf_file/0037/88795/fitzroy_fitzroy_river_wqo_290911.pdf

EHP (Department of Environment and Heritage Protection), (2012). *Code of environmental compliance, ERA 16—Extractive and screening activities.* Accessed April 23, 2021 via https://environment.des.qld.gov.au/__data/assets/pdf_file/0032/89276/pr-ses-extraction-v7.pdf

Queensland Globe, (2021). Accessed via https://qldglobe.information.qld.gov.au/

Standards Australia (2018). *ISO 31000:2018 Risk management – Guidelines.* Standards Australia: Sydney, NSW

SHG (Saunders Havill Group), (2021). *State Code 22 Response Stanwell Quarry Extension: 294 Hume Road, Kabra Prepared for Amcor Quarries*.

attachments

Attachment 1

Proposal Plans

Attachment 2

EMR / CLR Search Results

Author: Didi Tian
Ref number: 2021/001491

Queensland Government

Department of **Resources**

25 June 2021

Mr Sam Lyons
PO Box 1779
Milton BC QLD 4064

Dear Mr Lyons

Application for a Relevant Purpose determination under section 22A of the *Vegetation Management Act 1999* for the clearing of native vegetation on lot/s 1 RP616642 - Rockhampton Regional Council

I refer to your application submitted to the Department of Resources (the department) on 23 April 2021.

The Chief Executive has considered your request and is satisfied that the proposed development to clear vegetation for the purpose of relevant infrastructure activities meets the requirements of section 22A of the *Vegetation Management Act 1999*.

This decision is based on:

- the development proposal and information you submitted to the department on 23 April 2021
- circumstances at the time of this determination

Should your proposal change (eg. development footprint) or circumstances associated with your proposal change (eg. legislation changes, regional ecosystem mapping changes), you will need to request another section 22A relevant purpose determination.

This relevant purpose determination is valid for 2 years and will expire on 28/06/2023.

Please note that this letter is not a development approval to carry out vegetation clearing. You will need to apply for a development approval from the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) under the *Planning Act 2016.*

Prior to lodging a development application, it is strongly recommended that, you arrange a pre-lodgement meeting through the State Assessment and Referral Agency (SARA) to identify all relevant State legislation, approvals and application requirements.

Level 1
44 Nelson Street
Mackay QLD 4740

PO Box 63
Mackay
4740 QLD

Telephone: 13 58 34 or 135 VEG
Email: vegetation@resources.qld.gov.au
Web: www.resources.qld.gov.au

ABN 59 020 847 551

Other relevant Commonwealth or State approvals may also be required to undertake vegetation clearing. An indicative list of other legislation is provided in Attachment 1.

Should you require any additional information please contact your local SARA office.

Should you have any enquiries or require assistance regarding this request, please do not hesitate to contact Didi Tian, Natural Resource Management Officer, of the department on telephone (07) 4837 3458 quoting the above reference number

Yours sincerely



Didi Tian
Natural Resource Management Officer
Department of Resources

Attachment 1 - Legislation and Acts

Activity	Legislation	Agency	Contact details
Interference with overland flow	*Water Act 2000*	Department of Regional Development, Manufacturing and Water (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dnrme.qld.gov.au
Earthworks, significant disturbance	*Soil Conservation Act 1986*	Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.resources.qld.gov.au
Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (Queensland Government)	Ph. 13 QGOV (13 74 68) www.datsip.qld.gov.au
Mining and environmentally relevant activities Infrastructure development (coastal) Heritage issues Protected plants and protected areas[1]	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992* *Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
Interference with fish passage in a watercourse, mangroves Forest activities	*Fisheries Act 1994* *Forestry Act 1959*[2]	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 25 23 www.daf.qld.gov.au
Matters of National Environmental Significance including listed threatened species & ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of the Environment, (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Your relevant local government office	

[1] In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992,* which endeavours to ensure that protected plants (whether whole plants or protected plants parts) are not illegally removed from the wild, or illegally traded. Prior to ***clearing***, you should check the flora survey trigger map to determine if the ***clearing*** is within a high-risk area by visiting For further information or assistance on the protected plants flora survey trigger map for your property, contact the Department of Environment and Science on 13QGOV (13 74 68) or email palm@des.qld.gov.au

[2] Contact the Department of Agriculture and Fisheries before ***clearing:***

- Any sandalwood on state-owned land (including leasehold land)
- On freehold land in a 'forest consent area'
- More than five hectares on state-owned land (including leasehold land) containing commercial timber species listed in parts 2 or 3 of Schedule 6 of the Vegetation Management Regulation 2012 and located within any of the following local government management areas–Banana, Bundaberg Regional, Fraser Coast Regional, Gladstone Regional, Isaac Regional, North Burnett Regional, Somerset Regional, South Burnett Regional, Southern Downs Regional, Tablelands Regional, Toowoomba Regional, Western Downs Regional.



Flora Survey Report

Stanwell Quarry Extension, 294 Hume Road, Kabra
Prepared for AMCOR Quarries
21 January 2021

Job No. 10314

saunders havill group

Document Control

Document: Flora Survey Report for Stanwell Quarry Extension, Hume Road, Kabra prepared by Saunders Havill Group for AMCOR Quarries

Document Issue

Issue	Date	Prepared By	Checked By
Draft A	13.01.2021	JP/DH	MM

Prepared by
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1. Introduction

Saunders Havill Group was engaged by AMCOR Quarries to prepare a Protected Plants Flora Survey Report to enable clearing within areas mapped as 'High Risk' under the *Nature Conservation Act 1992* (NCA) for their Stanwell quarry site located at 294 Hume Road, Kabra, South-West of Rockhampton within an allotment described as Lot 1 on RP616642. The quarry footprint is proposed to be extended to north and east of the existing footprint, providing an additional 17.7 hectares to the existing 8 hectares currently under quarry works. The site is subject to approval conditions issued by Rockhampton Regional Council.

The Queensland Government has adopted a risk-based approach to the regulation of protected plants under the NCA. The regulatory framework captures activities that pose a high risk to plant biodiversity, and regulatory, educational and compliance effort are consequently focused on high risk activities. Under the framework, when a non-exempt clearing activity is proposed within a 'High Risk' area, the proponent of that activity is required to complete a flora survey prior to the commencement of clearing.

The main objective of the flora survey is to locate any Endangered, Vulnerable or Near Threatened (EVNT) plants that may be present within the impact area. This action is especially important for determining the degree of assessment required for a particular clearing activity. For example, if the survey establishes that EVNT plant species are not present within the impact area, the proposed clearing will be exempt and, following notification to the Queensland Government department administering the NCA, a clearing permit will not be required for the work to proceed. Alternatively, if EVNT plant species are identified, and clearing is considered to impact on the EVNT plant (*i.e.*, clearing directly impacts or occurs within 100 m of the EVNT plant) then an application for a *Clearing Permit (Protected Plants)* is required.

Contextually, the Stanwell quarry site is located 23 kilometres South-West of Rockhampton city centre. (refer **Figure 1**). It is currently an operational quarry, with an existing extraction footprint of approximately 8 hectares. The additional extraction activity is proposed to be extended to the North and East of the existing footprint within mapped Remnant vegetation and High-value regrowth vegetation. The quarry site is predominantly open woodland with a cleared power easement running along the southern extent of the 100m buffer zone. Cattle from a neighbouring property were frequently observed grazing in cleared areas of the site. Access to the quarry is via a meandering road beyond a security gate off Power Station Road, to the west of the quarry. A large dam is present 500 metres north-west of the quarry site. Refer to Figures 1 and 2 for the site context and site aerial including the proposed extension of the extraction activity and existing footprint. (**Figure 2**).

This report details the results of the protected plant flora survey which was conducted where proposed clearing is within the 'High Risk' areas on the Protected Plants Flora Survey Trigger Map (refer **Figure 3**). The flora survey was undertaken in accordance with the *Flora Survey Guidelines – Protected Plants* (Department of Environment and Science (DES) 2019).

Table 1: Property summary

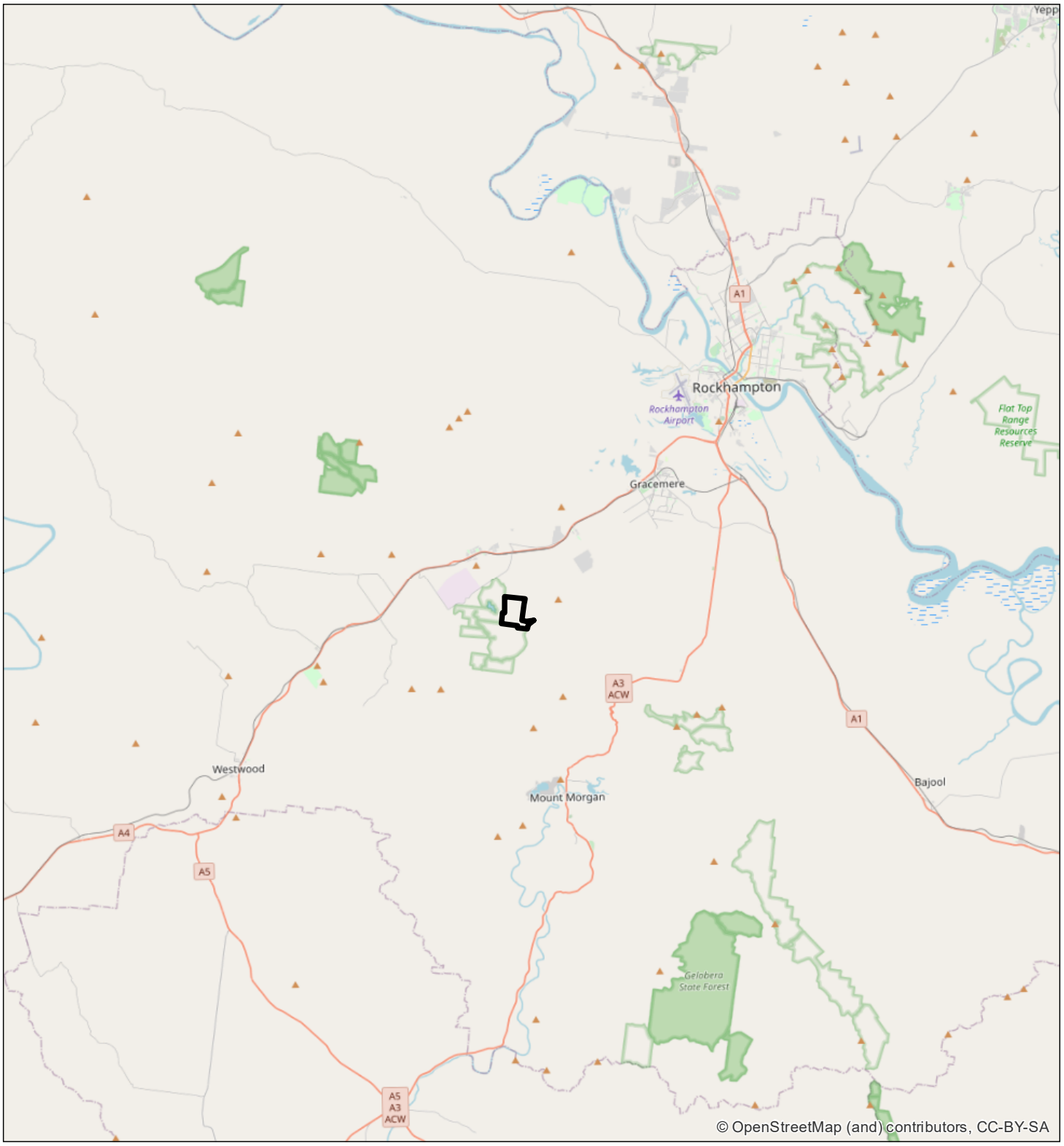
Address	294 Hume Road, Kabra, Queensland, 4702
RPD	Lot 1 on RP616642
Area	Approx. 25.7ha (proposed development footprint)
***NCA* Protected plants Flora Survey Trigger**	Wholly within high risk area
Vegetation Management Act 1999	Category B Remnant (Least concern), Category X non-remnant
Fisheries Act 1994	Low risk waterway for waterway barrier works
Matters of State Environmental Significance	Wildlife Habitat (endangered or vulnerable) Regulated Vegetation (Category B and Essential Habitat)
Koala Habitat	Not within KPA No koala habitat mapped on-site.
LGA	Rockhampton Regional Council
Planning Scheme	Rockhampton Regional Planning Scheme
Environmental Overlays	MSES MLES – General Waterways
Existing Land Use	Rural
Proposed Land Use	Quarry material extraction

1.1. Suitably qualified person details

David Havill is a person suitably qualified (tertiary qualifications and field-based experience) to undertake flora surveys for the stated purpose, and completed the flora surveys described in this report. Refer to **Appendix A** for the suitably qualified person's curriculum vitae.

I, David Havill certify that (a) I have adhered to all statutory requirements and flora survey guideline requirements, and (b) the flora survey report is an accurate and full account of the flora survey.

Signature: _____ Date: 17/11/20



Legend

Site DCDB

Figure 1

Site Context

AMCOR Quarries

File ref. 10314 E Figure 1 Site Context A
Date *4/12/2020*
Project *Hume Road, Kabra*

0 5 10 20 *km*

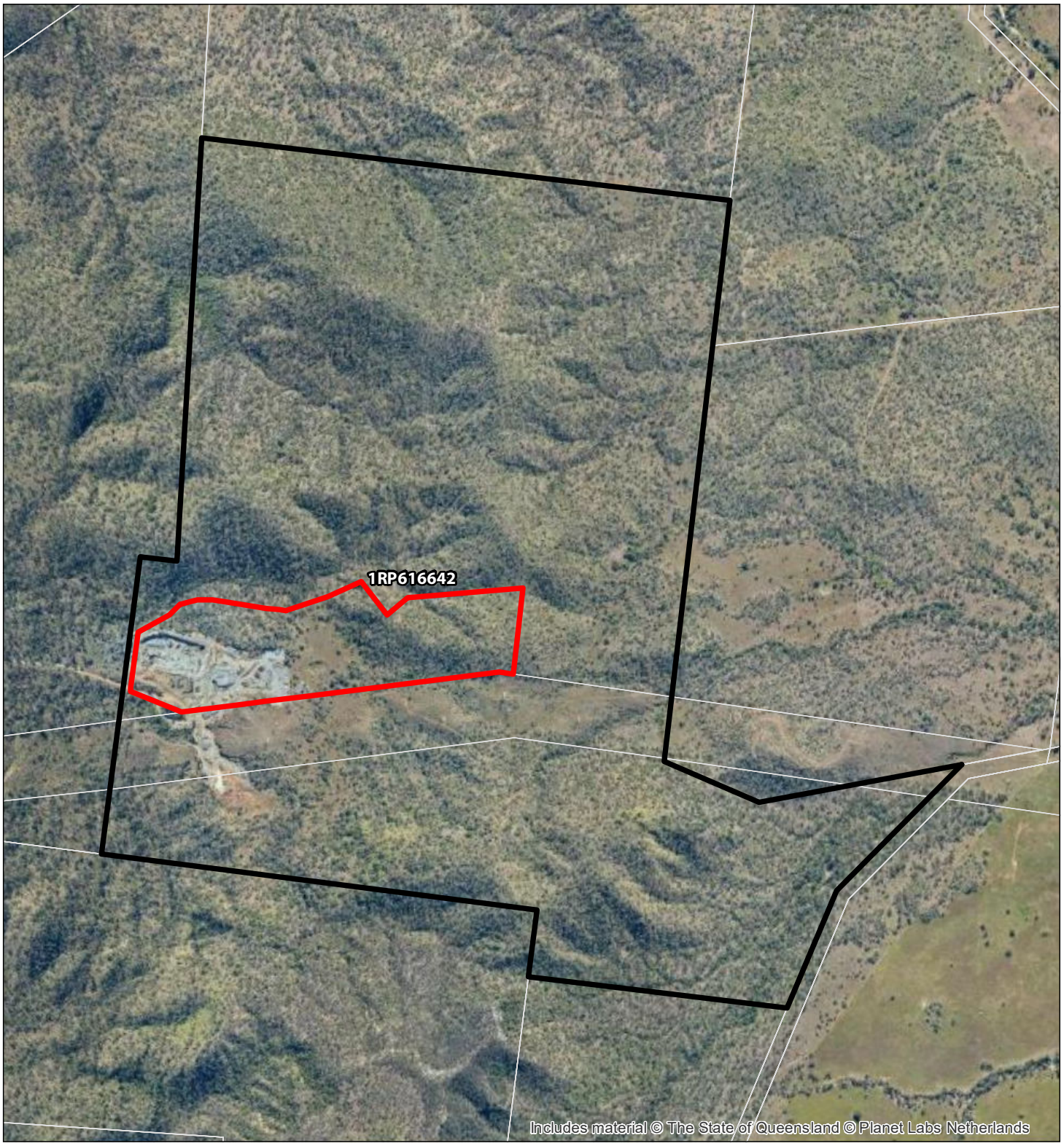
N

Scale (A4): 1:400,000 [GDA 1994 MGA Z56]

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Layer Source: *© State of Queensland (Department of Natural Resources, Mines and Energy) 2020.*



Legend

- Site DCDB
- Imapct Area
- Qld DCDB

Figure 2

Site Aerial

AMCOR
Quarries

File ref. 10314 E Figure 2 Site Aerial A
Date *4/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

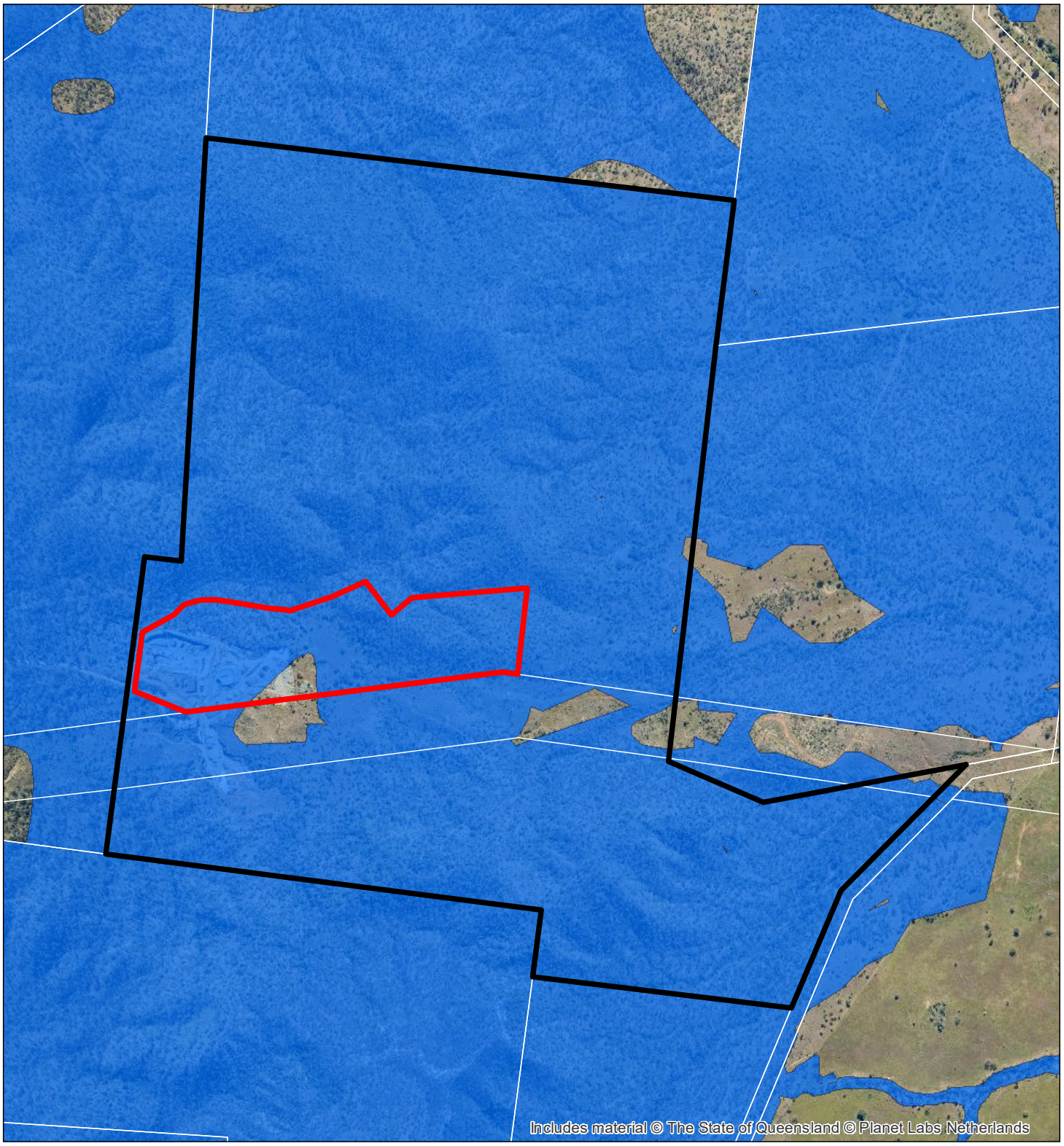
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Legend

- Site DCDB
- Qld DCDB
- High risk area - flora survey trigger
- Impact Area

Figure 3

NCA - Protected Plants
Flora Survey Trigger

AMCOR
Quarries

File ref. 10314 E Figure 3 NCA A
Date *4/12/2020*
Project ~~*Hume Road,*~~ *Kabra*

0 50 100 200 300 400 500 *m*

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Layer Source: © State of Queensland (Department of Natural Resources, Mines and Energy; Department of Environment and Science) 2020, Aerial (Nearmap 2020)

2. Desktop assessment

A review of historical and current aerial imagery, Queensland Herbarium regional ecosystem mapping, DES Wildlife Online database extract, Protected Matters Search Tool and Biomaps was undertaken to initially stratify the habitat types on-site and identify EVNT flora species that may potentially occur.

2.1. Nature Conservation Act 1992

The NCA classifies and protects significant areas (Protected Areas) and protects threatened plant and animal species. The *Nature Conservation (Plants) Regulation 2020 (NCPR)* lists plant and animal species presumed extinct, endangered, vulnerable, near threatened, least concern, international or prohibited.

Prior to flora surveys, the schedules of the NCPR were considered in this report using the Wildlife Online Database Search with a 5 km radius from the site. Three (3) flora species listed under the NCPR were identified as having the potential to occur on-site and are presented in **Table 2**. Refer to **Appendix B** for full search results.

Table 2: Wildlife Online search results - flora

Scientific name	Common name	NCA status
Cycas megacarpa	None	Endangered
Capparis humistrata	None	Endangered
Graptophyllum excelsum	None	Near Threatened

Interrogation of the Biomaps, Wildnet Online and Atlas of Living Australia searches identified the following relating to sightings of this flora species:

- *Cycas megacarpa* – Six recent records within 5 km of the study area;
- *Capparis humistrata* – Three recent records within 5km of study area;
- *Graptophyllum excelsum* – One recent record within 5km of study area.

2.2. Additional Legislative Instruments

In order to maximise the scope of the flora survey, a search of protected matters listed as potentially present within 5km of the site under the Federal *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) was conducted using the Protected Matters Search Tool. Nine (9) Potential flora EVNT species listed under the EPBC Act are present in **Table 3.** Refer to **Appendix C** for full search tool results.

Table 3: Protected Matters Search Results- flora

Scientific name	Common name	NCA status
Bulbophyllum globuliforme	Miniature Moss-orchid	Vulnerable
Bosistoa transversa	Ooline	Vulnerable

Cossinia australiana	Cossinia	Endangered
Cycas megacarpa	-	Endangered
Cycas ophiolitica	-	Endangered
Dichanthium setosum	Bluegrass	Vulnerable
Eucalyptus raveretiana	Black Ironbox	Vulnerable
Marsdenia brevifolia	-	Vulnerable
Samadera bidwillii	Quassia	Vulnerable

The *Vegetation Management Act 1999* (VMA) is the key mechanism by which the Queensland Government protects the state's environmental resources pertaining to vegetation.

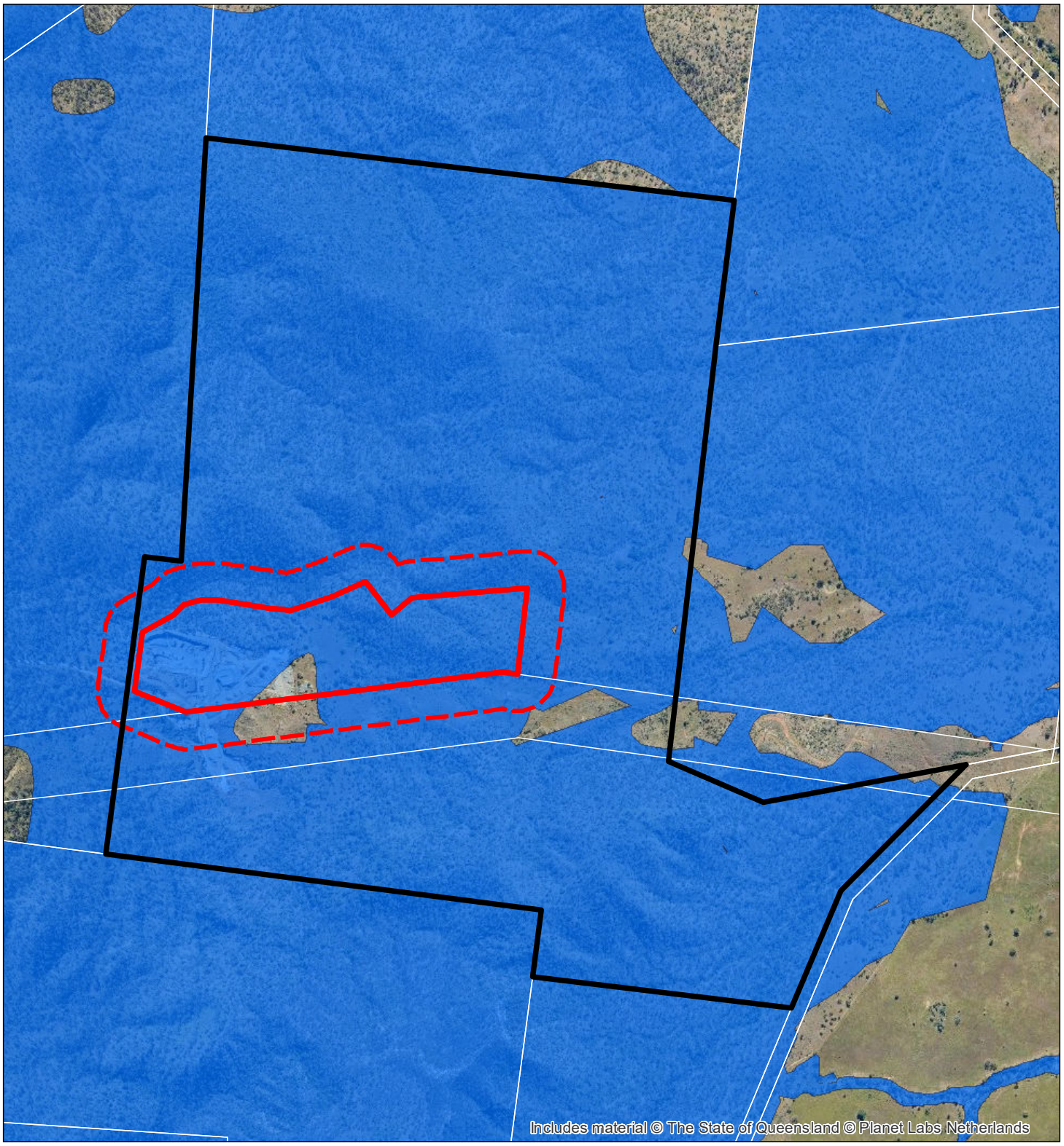
A review of aerial imagery alongside regional ecosystem mapping (contemporary and preclear) indicated two habitat types present across the area of clearing and buffer area, including Category B (least Concern) and Category C (least concern). The resulting clearing impact area (including 100 m buffer) is 47 ha, where a minimum of four meanders are required in accordance with the *Flora Survey Guidelines – Protected Plants* (DES 2019) (refer **Figure 4**).

Table 4: **Descriptions of mapped Regional Ecosystems onsite (taken from DES 2019)**

Mapped Vegetation Community	Regional Ecosystems	Description
1	Least Concern RE11.11.15	*Eucalyptus crebra* woodland on deformed and metamorphosed sediments and interbedded volcanics
2	Least concern RE11.11.3	Microphyll vine forest +/- *Araucaria cunninghamii* on old sedimentary rocks with varying degrees of metamorphism and folding
3	Least Concern RE11.11.5	*Corymbia citriodora*, *Eucalyptus crebra, E. acmenoides* open forest on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges

2.3. Survey timing and limitations

One EVNT flora survey event was completed on the 23rd and 24th November 2020 (Spring). The survey timing is considered appropriate for the EVNT flora identified during the desktop assessment (refer **Table 2**) as the EVNT species are either woody or non-woody with definitive key characteristics beyond the flower, fruit and seed attributes.



Legend

- Site DCDB
- Qld DCDB
- High risk area - flora survey trigger
- Impact Area
- Study Area (100m Buffer)

Figure 4

NCA - Study Area

AMCOR
Quarries

File ref. 10314 E Figure 4 NCA Study Area A
Date *4/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

N

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

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3. Flora survey

3.1. Clearing impact area

The proposed additional extraction area is approximately 17.7 hectares which is mapped as 'High Risk' area under Protected Plants Flora Survey Trigger Mapping (refer to **Figure 3).** The proposed quarry extension requires vegetation clearing in order to facilitate extractive processes. The Clearing Impact Area, which is defined as the area to be cleared inclusive of a 100m buffer, therefore results in an area of approximately 47ha which was required to be surveyed.

Flora surveys focussed in and around areas of mapped remnant vegetation as these were considered the most likely to contain protected flora species (refer **Figure 3** and **Figure 4**).

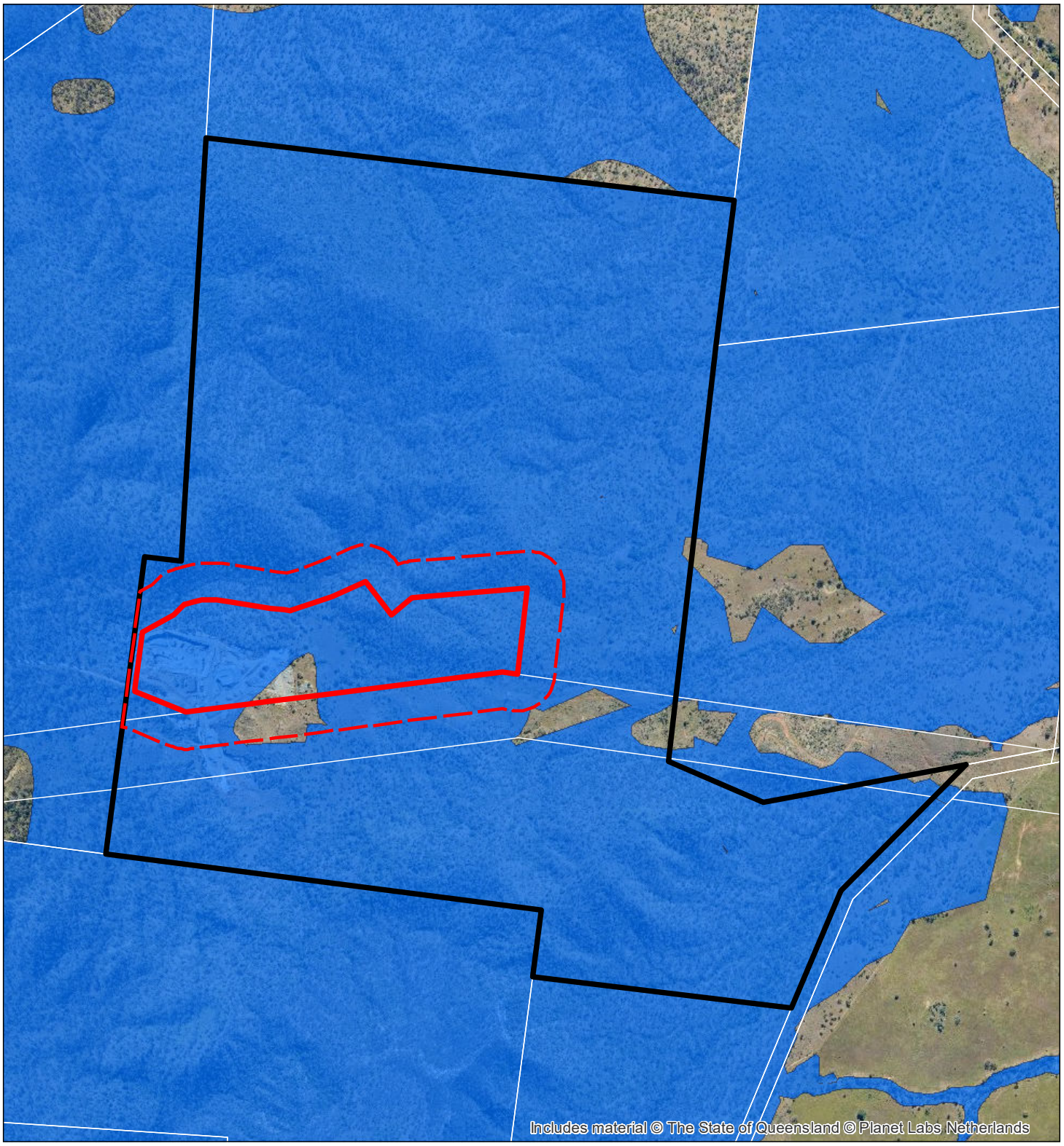
3.2. Survey extent and limitations

The Clearing Impact Area and field survey effort, including survey transect extents, are shown on **Figure 6**. Four timed meanders were conducted within the Clearing Impact Area. General observations for EVNT flora species were conducted at all times while on-sit, including while traversing roads and existing quarry areas both inside and outside the designated Clearing Impact Area. Each timed meander transect focussed on essential habitat and identification of the flora species identified in the desktop searches. Refer to **Figure 6** for transect location and **Table 5** for coordinates of the timed meander transects.

For the timed meanders, the investigation area was traversed on foot and by vehicle, and all flora specimens encountered were included in the dataset. A total of four meanders were carried out across the protected clearing impact area.

Table 5: Transect co-ordinates

Transect	Start (latitude)	Start (longitude)	Finish (latitude)	Finish (longitude)
1	-23.526788	150.354339	-23.524444	150.349267
2	-23.524106	150.348940	-23.526638	150.350704
3	-23.526592	150.351356	-23.527209	150.354646
4	-23.524905	150.347461	-23.524896	150.347452



Legend

- Site DCDB
- Qld DCDB
- High risk area - flora survey trigger
- Impact Area
- Study Area (100m Buffer)

Figure 5

NCA - Revised Study Area

AMCOR Quarries

File ref. 10314 E Figure 5 NCA Revised Study Area A
Date *4/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

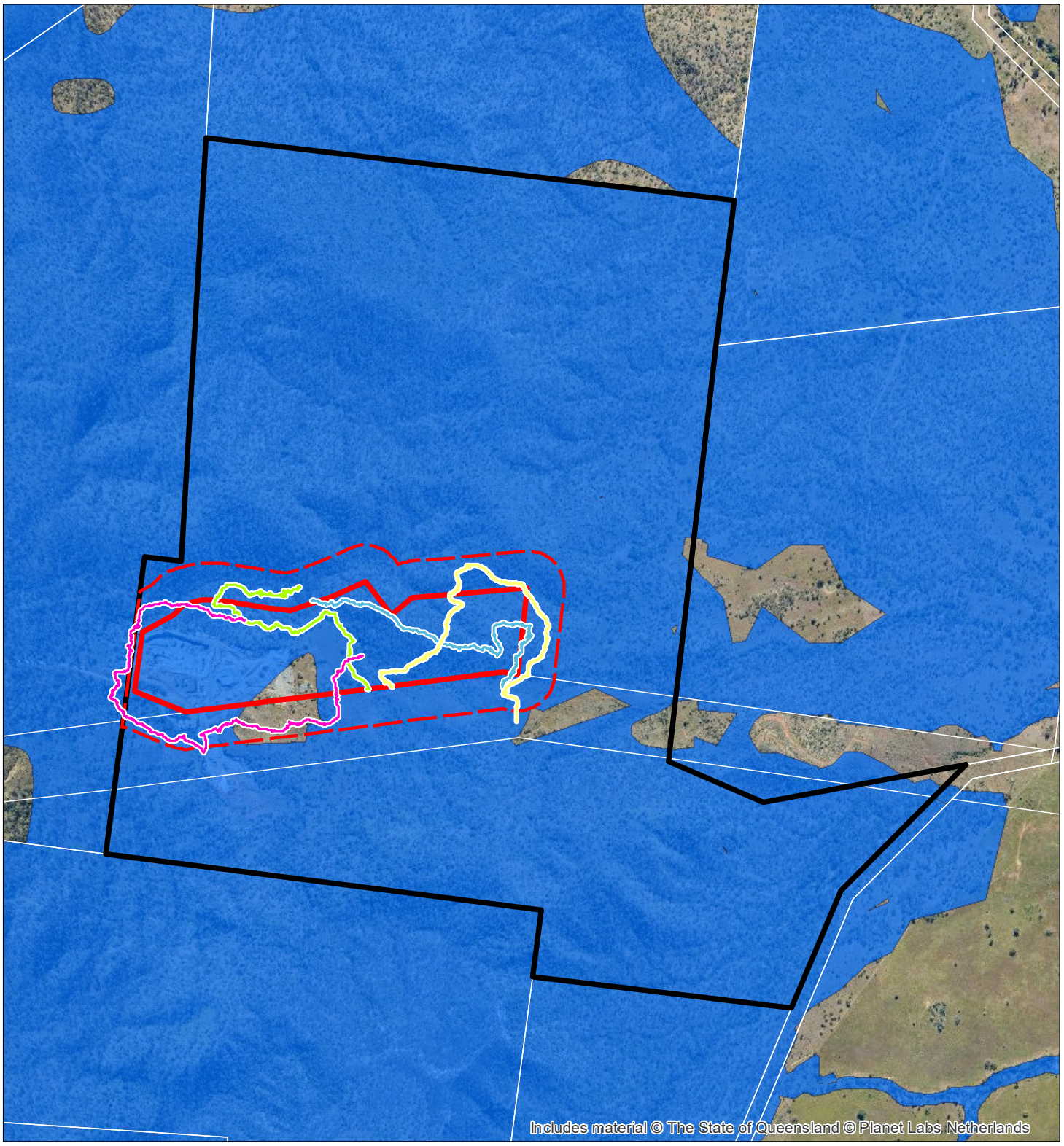
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Legend

- Site DCDB
- Qld DCDB
- High risk area - flora survey trigger
- Impact Area
- Study Area (100m Buffer)
- NCA Meander 1
- NCA Meander 2
- NCA Meander 3
- NCA Meander 4

Figure 6

NCA - Survey Results

File ref. 10314 E Figure 6 Survey A
Date *4/12/2020*
Project *Hume Road, Kabra*

0 50 100 200 300 400 500 *m*

Scale (A4): 1:15,000 [GDA 1994 MGA Z56]

N

AMCOR Quarries

saunders havill group

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3.3. Flora survey methodology

The impact area was surveyed using the preferred timed meander survey technique as per the *Flora Survey Guidelines – Protected Plants* by Senior Ecologist David Havill (the suitably qualified person) (refer to **Appendix A** for Curricula Vitae).

The surveys were carried out as follows:

1. The impact area was traversed by foot by a project Ecologist (refer **Figure 4)**.
2. The start and finish times of each meander were recorded.
3. The tracklog of the project Ecologists' transects were recorded using a handheld GPS unit accurate to < 1 m.
4. All unique plant species encountered during each meander within each habitat type were recorded.
5. The site and surrounds were photographed, and any relevant observations were recorded.

Under section 4.1.1 of the *Flora Survey Guidelines – Protected Plants*, a clearing impact area of 47 ha (including the revised buffer) requires a minimum of 4 meanders per habitat type. This was achieved with 4 meanders being completed within the development footprint and the buffer zone with the intention of ensuring presence of *Cycas megacarpa*, and any other threatened plant, was not overlooked (refer **Figure 6**).

4. Flora survey results

4.1. Meander survey results

The preferred timed meander surveys did <u>not encounter</u> EVNT species protected under the NCA within the clearing impact area.

A total of ninety-nine (99) flora species were identified throughout the survey period (refer **Appendix C**). A total of 7,011m (approximately 7 km) was searched (for meander surveys) for threatened species by a suitably qualified person using the meander survey method described in **Section 3.3**.

Table 6 provides a summary of the timed meanders. A description of the transect areas and respective flora species identified, with associated photographs, is provided in the following subsections.

Table 6: Meander survey summary

Site	Date	Start time (hr:min)	Finish time (hr:min)	Duration (hr:min)	Distance (m)	No. Flora species
1	17/11/2020	10:15am	11:15am	1:00	1524	56
2	17/11/2020	11:15am	12:15am	1:00	1454	58
3	17/11/2020	12:20 pm	1:35 pm	1:15	1859	34
4	18/11/2020	1:40 pm	3:00 pm	1:20	2174	66

4.1.1 Meander 1

Meander one started in the far eastern extent of the subject area and traversed west to the current quarry footprint. This NCA meander covered approximately 1.5 km and was located within Category B (remnant) vegetation within the mapped 'high risk' area for protected plants and 100m buffer. This meander partly includes a highly modified power easement, subjected to significant clearing resulting in scattered eucalypt regrowth and dominated by grasses. The majority of the meander was located within relatively intact eucalypt woodland within the impact area. Evidence of cattle use within this area was noted.

The remnant vegetation is mapped as a 'Least Concern' composite RE of 11.11.15/11.11.3/11.11.5. 85% of the composite RE is RE11.11.15 described as *Eucalyptus crebra +/- Corymbia erythrophloia +/- E. populnea +/- E. melanophloia +/- C. tessellaris +/- C. clarksoniana woodland to open woodland often with a shrubby layer on deformed and metamorphosed sediments and interbedded volcanics.* Species observed throughout meander one were consistent with the regional ecosystem mapping defined by a dominant canopy of *Corymbia erythrophloia* (Variable-barked Bloodwood), *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Eucalyptus melanophloia (Silver-leaf Ironbark).*

A total of fifty-six (56) flora species were identified during this meander. **No NCA listed plants were recorded in this area.**



Photo set 1: Location of NCA meander one. Rural land-use within mapped Category B (remnant) vegetation.

4.1.2 Meander 2

Meander two starts in the centre of the site then traverses the eastern and northern side of the current quarry footprint including a mapped fisheries waterway. This NCA meander covered approximately 1.4 km, and was located within Category B (remnant) vegetation within the mapped 'high risk' area for protected plants and 100m buffer. This meander consisted of intact eucalypt woodland with patches of open grassland (refer **Photo Set 2**).

The remnant vegetation is mapped as a 'Least Concern' composite RE of 11.11.15/11.11.3/11.11.5. 85% of the composite RE is RE11.11.15 described as *Eucalyptus crebra +/- Corymbia erythrophloia +/- E. populnea +/- E. melanophloia +/- C. tessellaris +/- C. clarksoniana woodland to open woodland often with a shrubby layer on deformed and metamorphosed sediments and interbedded volcanics*. Species observed throughout meander two were consistent with the regional ecosystem mapping with a dominant canopy of *Corymbia erythrophloia* (Variable-barked Bloodwood), *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Eucalyptus melanophloia (Silver-leaf Ironbark)*. In addition, typical riparian species including *Melaleuca leucadendra* (Weeping Paperbark) and *Melaleuca bracteate* (Black Tea-tree) were recorded within the mapped waterway north of the impact area, within the 100m buffer.

A total of fifty-eight (58) flora species were identified during this meander. **No NCA listed plants were recorded in this area.**



Photo set 2: Location of NCA meander two. Rocky steep slopes adjacent to current quarry footprint.

4.1.3 Meander 3

Meander three starts in the centre of the site heading east to the north eastern extent of the impact area. This NCA meander covered approximately 1.9 km, and was located within Category B (remnant) vegetation within the mapped 'high risk' area for protected plants and 100m buffer. This meander consisted of intact eucalypt woodland with patches of open grassland refer **Photo Set 2**).

The remnant vegetation is mapped as a 'Least Concern' composite RE of 11.11.15/11.11.3/11.11.5. 85% of the composite RE is RE11.11.15 described as *Eucalyptus crebra +/- Corymbia erythrophloia +/- E. populnea +/- E. melanophloia +/- C. tessellaris +/- C. clarksoniana woodland to open woodland often with a shrubby layer on deformed and metamorphosed sediments and interbedded volcanics.* Species observed throughout meander three were consistent with the regional ecosystem mapping with a dominant canopy of *Corymbia erythrophloia* (Variable-barked Bloodwood), *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia tessellaris* (Moreton Bay Ash). This meander traversed a number of gully lines which were observed as being weed infested with *Lantana camara* (Lantana) and *Cryptostegia grandiflora* (Rubber Vine).

A total of thirty-four (34) flora species were identified during this meander. **No NCA listed plants were recorded in this area.**



Photo set 3: Location of NCA meander three consisting of a combination of open canopy and intact woodland.

4.1.4 Meander 4

Meander four is predominantly located within the 100m buffer of the mapped 'high risk area for protected plants' adjacent to the current quarry footprint. This NCA meander covered approximately 2.2km within primarily Category B (remnant) and a polygon of Category X (non-remnant) vegetation. This meander included a section of the power easement which runs along the southern boundary of the impact area. This area has been significantly cleared and dominated by grasses and scattered regenerating canopy species (refer **Photo set 4**).

The remnant vegetation is mapped as a 'Least Concern' composite RE of 11.11.15/11.11.3/11.11.5. 85% of the composite RE is RE11.11.15 described as *Eucalyptus crebra +/- Corymbia erythrophloia +/- E. populnea +/- E. melanophloia +/- C. tessellaris +/- C. clarksoniana woodland to open woodland often with a shrubby layer on deformed and metamorphosed sediments and interbedded volcanics*. Species observed throughout meander three were consistent with the regional ecosystem mapping with a dominant canopy of *Corymbia erythrophloia* (Variable-barked Bloodwood), *Eucalyptus crebra* (Narrow-leaved Ironbark) and *Corymbia tessellaris* (Moreton Bay Ash).

A total of sixty-six (66) flora species were identified during this meander. **No NCA listed plants were recorded in this area.**





Photo set 4: Location of NCA meander four consisting of a cleared power easement and eucalypt woodland.

5. Summary

The Environmental Management Division of the Saunders Havill Group (SHG) was engaged by AMCOR quarries to prepare a Protected Plants Flora Survey Report to enable clearing within areas mapped as 'High Risk' under Nature Conservation Act 1992 (NCA) within the project site at Stanwell quarry, 294 Hume Road, Kabra. The quarry extension clearing extent is areas mapped as 'High Risk' under the NCA, including revised a 100 m buffer, which triggers the requirements for protected plant surveys to be completed prior to any clearing work. The quarry is located in Stanwell, South-West of Rockhampton within an allotment described as Lot 1 on RP616642. The quarry footprint is proposed to be extended to the north and east of the existing footprint, providing an additional 17.7 hectares to the existing 8 hectares currently under quarry works.

Surveys were undertaken by a suitably qualified person from Saunders Havill Group across the clearing impact area to ascertain if any protected plants were present and consequently potentially impacted by the expansion works. The preferred random meander technique, as outlined in the *Flora Survey Guidelines – Protected Plants* (DES 2019), was employed to identify the presence of EVNT species. Four flora survey meanders were undertaken across multiple properties in which protected plants were earmarked as potential inhabitants.

A total of ninety-nine (99) flora species were identified throughout the survey period (refer to **Appendix C**). The survey transects covered 7,011m (approximately 7 km) over four meander surveys for threatened species by a suitably qualified person using the meander survey method described in **Section 3.3.** **No EVNT specimen were identified during the flora survey.**

6. Appendices

Appendix A

Curricula Vitae

Appendix B

Wildlife Online Extract

Nature Conservation Act 1992

Appendix C

NCA Transects – flora species observed

Appendix A

Curricula Vitae

Senior Ecologist – David Havill

David Havill – 02.10.2018

David Havill has significant practical experience in the areas of ecological site assessments (flora and fauna), weed management programs, large scale revegetation projects, wetland rehabilitation and waterway restoration.

He has a strong understanding of the intricate workings of the *Vegetation Management Act 1999, Nature Conservation Act 1992* and *Environment Protection and Biodiversity Conservation Act 1999* and the complex codes and policies which influence site vegetation constraints.

David's expertise relates to the on-site identification and spatial mapping of fauna and flora species including endangered, rare and vulnerable plants and animals. He has an accurate understanding of site survey processes and standards developed by the State and Commonwealth Governments. This provides the ability to challenge the various inaccuracies that occur within broad scale vegetation mapping developed by these Government agencies.

David works closely with our in-house team of GIS, environmental planning, and landscape rehabilitation specialists to document findings of ecological survey and prepare targeted restoration and rehabilitation strategies. He has a strong understanding of construction techniques associated with development projects and can prepare practical flora and fauna management plans to assist in guiding the construction process within sensitive areas.

Qualifications

Bachelor of Applied Science (Natural Systems and Wildlife Management), The University of Queensland (1998).

Self-Assessment

Qualification / Experience	Condition	Evidence	Points
A relevant qualification from a recognised institution (e.g. University, TAFE) that results in a thorough knowledge of plant identification and flora surveys.	Queensland focussed	Bachelor of Applied Science (Natural Systems and Wildlife Management), The University of Queensland (1998)	**50**
Experience within the last 2 years and a total of at least 5 years at leading flora surveys in a field-based environment at a rate of no less than 5 comprehensive botanical surveys that focus on locating and identifying EVNT plants, per year.	Qld based field flora surveys experience	Specific experience carrying out NCA protected plants surveys provided in the table below. David carries out numerous flora and fauna surveys every year. Additional information on specific projects can be provided on request.	**60**
		TOTAL	**110**

Applicant	Street Address / Lot on Plan	DES Exemption / Permit	Date Issued
Boral Resources Pty Ltd	Lot 8 & 9 Plan RP749301	WIPA15213114	16/10/2014
Boral Resources Pty Ltd	720 Moy Pocket Road, Moy Pocket	AR083681	16/02/2016
Boral Resources Pty Ltd	580 Upper Ormeau Road, Kingsholme	Not provided	21/11/2016
Varsity Property Pty Ltd ATF Varsity Development Unit Trust	Weale Street, Mount Kynoch	AR095583	30/11/2016
Lend Lease Communities (Springfield) Pty Ltd	Sinnathamby Boulevard, Springfield	AR09563	12/12/2016
Frasers Property Bahrs Scrub Pty Ltd	Sinnathamby Boulevard, Springfield	AR095953	23/01/2017 (surveys completed in 2016)
Lend Lease Communities (Springfield) Pty Ltd	Sinnathamby Boulevard, Springfield	AR098350	01/03/2017
Lend Lease Communities (Springfield) Pty Ltd	Sinnathamby Boulevard, Springfield	AR098906	14/03/2017
Lend Lease Communities (Springfield) Pty Ltd	Menora Road, Bahrs Scrub	AR100016	21/04/2017
Lend Lease Communities (Springfield) Pty Ltd	Sinnathamby Boulevard, Springfield	AR101106	29/05/2017
Time Investments Pty Ltd	34-80 Stegalls Road, Yandina	AR101049	29/05/2017
Villa Green Pty Ltd	Pub Lane, Greenbank	APP0013977	15/02/2018
Springfield City Group Pty Limited	LOT 62, 63, 65, 66 & 67 Plan SP291400	APP0015371	09/03/2018
Stockland Development Pty Ltd	LOT 9997, 9000 and 9002 Plan SP292760	APP0015654	19/03/2018
Boral Resources Pty Ltd	Lot 8 & 9 Plan RP749301	APP0016964	20/04/2018
Frasers Property Pty Ltd	Lot 281 Plan SP283121	APP0017471	03/05/2018

Appendix B

Wildlife Online Extract

Nature Conservation Act 1992

Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: Native
Status: Rare and threatened species
Records: All
Date: All
Latitude: -23.5221
Longitude: 150.3521
Distance: 5
Email: meganmckinney@saundershavill.com
Date submitted: Thursday 08 Oct 2020 07:09:54
Date extracted: Thursday 08 Oct 2020 07:20:02

The number of records retrieved = 7

Disclaimer

As the DSITIA is still in a process of collating and vetting data, it is possible the information given is not complete. The information provided should only be used for the project for which it was requested and it should be appropriately acknowledged as being derived from Wildlife Online when it is used.

The State of Queensland does not invite reliance upon, nor accept responsibility for this information. Persons should satisfy themselves through independent means as to the accuracy and completeness of this information.

No statements, representations or warranties are made about the accuracy or completeness of this information. The State of Queensland disclaims all responsibility for this information and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Cacatuidae	*Calyptorhynchus lathami erebus*	glossy black-cockatoo (northern)		V		1
animals	birds	Columbidae	*Geophaps scripta scripta*	squatter pigeon (southern subspecies)		V	V	14
animals	birds	Strigidae	*Ninox strenua*	powerful owl		V		1
animals	mammals	Pseudocheiridae	*Petauroides volans volans*	southern greater glider		V	V	2
plants	land plants	Acanthaceae	*Graptophyllum excelsum*			NT		1
plants	land plants	Capparaceae	*Capparis humistrata*			E		3/2
plants	land plants	Cycadaceae	*Cycas megacarpa*			E	E	6/2

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.* The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.* The values of EPBC are Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Extinct in the Wild (XW) and Vulnerable (V).

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Appendix C

NCA Transects – flora species observed

Meander 1 – 17.11.2020

Time	Species name	Common Name
10:15 AM	*Cenchrus ciliaris*	Buffel Grass
	Macroptilium atropurpureum	Siratro
	Desmodium intortum	Greenleaf Desmodium
	Heliotropium amplexicaule	Blue Heliotrope
	Lantana camara	Lantana
	Grewia latifolia	Dog's Balls
	Solanum ellipticum	Potato Bush
	Capparis canescens	Wild Orange
	Acacia salicina	Sally Wattle
	Opuntia stricta	Prickly Pear
	Cymbidium canaliculatum	Channelled Boat-lip Orchid
	Chloris virgata	Feathertop Rhodes Grass
10:20 AM	*Heteropogon contortus*	Black Speargrass
	Whalenbergia gracilis	Small-flowered Bluebell
	Alphitonia excelsa	Soap Tree
	Eremophila maculata	Fuchsia Bush
	Ficus coronata	Sand Paper Fig
	Hibiscus heterophyllus	Native Hibiscus
	Eucalyptus melanophloia	Silver-leaved Ironbark
	Corymbia erythrophloia	Variable-barked Bloodwood
	Cryptostegia grandiflora	Rubber Vine
	Ficus rubiginosa	Port Jackson Fig
	Themeda triandra	Kangaroo Grass
10:25 AM	*Erythrina vespertilio*	Batwing Coral Tree
	Lantana montevidensis	Creeping Lantana
	Xanthorrhoea johnsonii	Grass Tree
10:30 AM	*Panicum decompositum*	Native Millet
	Alstonia constricta	Bitter Bark
	Atalaya hemiglauca	Whitewood
	Stachytarpheta jamaicensis	Light Blue Snakeweed
	Bidens pilosa	Cobbler's Pegs
	Senna pendula	Easter Cassia
10:35 AM	*Capparis canescens*	Wild Orange
	Cupaniopsis anacardoides	Tuckeroo
	Santalum lanceolatum	Sandlewood
	Heteropogon contortus	Blackspear Grass
	Alyxia magnifolia	Large-leaved Chain Fruit
	Brachychiton acerifolius	Flame Tree
	Eriocereus martinii	Harrisia Cactus
	Aeschynomene indica	Budda Pea
10:40 AM	*Bothriochloa bladhii*	Forest Bluegrass
	Pennisetum setaceum	African Fountain Grass
10:45 AM	*Gomphocarpus physocarpus*	Balloon Cotton Bush
	Senna occidentalis	Coffee Senna

10:50 AM	*Eucalyptus crebra*	Narrow Leaf Ironbark
	Carissa ovata	Current Bush
	Passiflora suberosa	Corky Passion Vine
	Eustrephus latifolius	Wombat Berry
10:55 AM	*Andropogon virgincus*	Whisky Grass
	Cymbidium canaliculatum	Channelled Boat-lip Orchid
11:00 AM		
11:05 AM	*Breynia oblongifolia*	Coffee Bush
	Dodonaea viscosa subsp. Angustissima	Narrow Leaf Hop Bush
11:10 AM		
11:15 AM	*End*	

Meander 2 – 17.11.2020

Time	Species name	Common Name
11:15 AM	*Corymbia tessellaris*	Moreton Bay Ash
	Melaleuca bracteata	Black Tea-tree
	Melaleuca leucadendra	Weeping Paperbark
	Corymbia erythrophloia	Variable Barked Bloodwood
	Lantana camara	Lantana
	Lantana montevidensis	Creeping Bloodwood
	Melinis repens	Red Natal Grass
	Cryptostegia grandiflora	Rubber Vine
	Grewia latifolia	Dog's Balls
	Eucalyptus crebra	Narrow Leaf Ironbark
	Acacia salicina	Sally Wattle
	Solanum seaforthianum	Brazilian Nightshade
	Passiflora suberosa	Corky Passion Vine
	Opuntia tomentosa	Prickly Pear
	Neonotonia wightii	Glycine
	Bidens pilosa	Cobbler's Pegs
	Themeda triandra	Kangaroo Grass
	Alyxia ruscifolia	Chain Fruit
11:20 AM	*Mallotus philippensis*	Red Kamala
	Lomandra longifolia	Mat Rush
	Brennia oblongifolia	Coffee Bush
	Santalum lanceolatum	Sandlewood
	Trophis scandens	Burney Vine
	Cupaniopsis anacardoides	Tuckeroo
	Calyptocarpus vialis	Creeping Cinderella Weed
	Alphitonia excelsa	Soap Tree
	Cyperus polystachyos	Bunchy Sedge
11:25 AM	*Stachytarpheta jamaicensis*	Light Blue Snake Weed
	Parthenium hysterophorus	Parthenium Weed
	Brachychiton australis	Broad Leaved Bottle Tree
	Eucalyptus tereticornis	Forest Red Gum
11:30 AM	*Megathyrsus maximus*	Guinea Grass
	Ficus coronata	Sand Paper Fig
	Solanum ellipticum	Potato Bush
	Setaria sphacelata	South African Pigeon Grass
	Pennisetum setaceum	African Fountain Grass
	Ficus rubiginosa	Port Jackson Fig
11:35 AM	*Acacia disparrima*	Hickory Wattle
	Hibiscus heterophyllus	Native Hibiscus
	Eucalyptus melanophloia	Silver Leaf Ironbark
	Medicago polymorpha	Burr Medic
	Heteropogon contortus	Black Speargrass
	Sida acuta	Small Flannel Weed
11:40 AM	*Eremophila debilis*	Winter Apple

	Abrus precatorius	Gidee Gidee
	Atalaya hemiglauca	Whitewood
11:45 AM	*Cenchrus ciliaris*	Buffel Grass
11:50 AM	*Eragrostis brownii*	Brown's Love Grass
11:55 AM	*Xanthorrhoea johnsonii*	Grass Tree
12:00 PM		
12:05 PM	*Heliotropium amplexicaule*	Blue Heliotrope
	Gomphocarpus physocarpus	Balloon Cotton Bush
	Cymbidium canaliculatum	Channelled Boat-lip Orchid
12:10 PM		
	Eremophila bignoniiflora	Dogwood
12:15 PM	*End*	
	Cymbidium canaliculatum	Channelled Boat-lip Orchid
12:10 PM		
	Eremophila bignoniiflora	Dogwood
12:15 PM	*End*	

Meander 3 – 17.11.20

Time	Species name	Common Name
12:20 PM	*Eucalyptus crebra*	Narrow Leaf Ironbark
	Corymbia tessellaris	Moreton Bay Ash
	Corymbia erythrophloia	Variable Barked Bloodwood
	Eremophila bignoniiflora	Dogwood
	Lantana camara	Lantana
	Cryptostegia grandiflora	Rubber Vine
	Melinis repens	Red Natal Grass
	Acacia disparrima	Hickory Wattle
	Solanum ellipticum	Potato Bush
	Cenchrus ciliaris	Buffel Grass
	Medicago polymorpha	Burr Medic
	Acacia salicina	Sally Wattle
12:25 PM	*Opuntia tomentosa*	Prickly Pear
	Stachytarpheta jamaicensis	Light Blue Snake Weed
	Desmodium intortum	Greenleaf Desmodium
	Heliotropium amplexicaule	Blue Heliotrope
	Alphitonia excelsa	Soap Tree
	Ficus rubiginosa	Port Jackson Fig
	Lantana montevidensis	Creeping Lantana
	Themeda triandra	Kangaroo Grass
12:35 PM		
12:40 PM	*Xanthorrhoea johnsonii*	Forest Grass Tree
	Eustrephus latifolius	Wombat Berry
	Gomphocarpus physocarpus	Balloon Cotton Bush
12:45 PM	*Grewia latifolia*	Dogs Balls
12:50 PM		
12:55 PM		
1:00 PM		
1:05 PM	*Canthium attenuatum*	Myrtle
	Erythrina vespertilo	Batwing Coral Tree
1:10 PM	*Breynia oblongifolia*	Coffee Bush
	Lysiphyllum hookeri	White Flowered Bauhinia
	Ozothamnus diomifolius	Sago Flower
	Eucalyptus melanophloia	Silver Leaf Ironbark
1:15 PM	*Ficus coronata*	Sand Paper Fig
	Lomandra longifolia	Mat Rush
	Bidens pilosa	Cobbler's Pegs
	Petalostigma pubescens	Quinine Bush
1:20 PM		
1:25 PM		
1:30 PM		
1:35 PM	*End*	

Meander 4 – 18.11.20

Time	Species name	Common Name
1:40 PM	*Melaleuca leucadendra*	Weeping Paperbark
	Acacia salicina	Sally Wattle
	Cenchrus ciliaris	Buffel Grass
	Cryptostegia grandiflora	Rubber Vine
	Lantana camara	Lantana
	Cynodon dactylon	Green Couch
	Aristida latifolia	Feathertop Wiregrass
	Melinis repens	Red Natal Grass
	Lantana montevidensis	Creeping Lantana
	Megathyrsus maximus	Guinea Grass
	Corymbia tessellaris	Moreton Bay Ash
	Eucalyptus melanophloia	Silver-leaved Ironbark
	Corymbia erythrophloia	Variable Barked Bloodwood
	Heliotropium amplexicaule	Blue Heliotrope
1:45 PM	*Sida acuta*	Broom Weed
	Neptunia gracilis	Native Sensitive Weed
	Gomphocarpus physocarpus	Balloon Cotton Bush
	Atalaya hemiglauca	Whitewood
	Bidens pilosa	Cobble's Pegs
	Mallotus philippensis	Red kamala
1:50 PM	*Heteropogon contortus*	Black Speargrass
	Eucalyptus crebra	Narrow Leaf Ironbark
	Macroptilium atropurpureum	Siratro
	Eustrephus latifolius	Wombat Berry
1:55 PM	*Santalum lanceolatum*	Sandlewood
	Cymbidium canaliculatum	Channelled Boat-lip Orchid
	Eremophila deblis	Winter Apple
	Vigna lanceolata	Maloga Bean
	Cassytha pubescens	Devils Twine
	Passiflora suberosa	Corky Passion Vine
	Alphitonia excelsa	Soap Tree
2:00 PM	*Carrisa ovata*	Current Bush
	Alyxia ruscifolia	Chain Fruit
	Stachytarpheta jamaicensis	Light Blue Snake Weed
	Grewia latifolia	Dogs Balls
2:05 PM	*Parthenium hysterophorus*	Parthenium Weed
	Chloris inflata	Purpletop Chloris
	Eragrostis brownii	Brown's Love Grass
	Cupaniopsis anacardoides	Tuckeroo
	Solanum ellipticum	Potato Bush
	Gomphrena celosioides	Gomphrena Weed
2:10 PM	*Argemone ochroleuca*	Prickly Poppy
	Themeda triandra	Kangaroo Grass

	Medicago polymorpha	Burr Medic
	Erythrina vespertilio	Bat Wing Coral Tree
	Xanthorrhoea johnsonii	Forest Grass Tree
2:15 PM	*Opuntia tomentosa*	Prickly Pear
	Hibiscus heterophyllus	Native Hibiscus
2:20 PM	*Pennisetum setaceum*	African Fountain Grass
	Urochloa decumbens	Signal Grass
	Sporobolus caroli	Fairy Grass
	Brachychiton rupestris	Bottle Tree
2:25 PM	*Mallotus philippensis*	Red Kamala
	Leucaena leucocephala	Leucaena
	Melaleuca bracteata	Black Tea Tree
	Dactyloctenium radulans	Button Grass
	Melaleuca viminalis	Weeping Bottlebrush
	Capparis canescens	Wild Orange
	Ficus rubiginosa	Port Jackson Fig
2:30 PM	*Dianella caerulea*	Blueberry Lily
	Dichanthium sericeum	Queensland Bluegrass
	Datura stramonium	Thornapple
2:35 PM	*Crinum flaccidum*	Murray Lily
	Ficus virens	White Fig
	Petalostigma pubescens	Quinine Bush
2:40 PM	*Trema tomentosa*	Poison Peach
2:45 PM		
2:50 PM		
2:55 PM		
3:00 PM	*End*	

Rural Zone Code

Overall Outcomes	Response
(a) development in the zone accommodates predominantly rural uses;	The proposed development is an extension to an existing extractive industry operation (Stanwell Quarry). Extractive industry uses are recognised as a land use that may be suited to different types of rural land (see (1)(b) of the Purpose of the Rural Zone Code). Considering that the Stanwell Quarry is an existing land use and the proposed extension will not impact on any land suitable for rural uses, it is believed that the proposal complies with overall outcome (a).
(b) development: i. does not detract from the scenic landscape features of rural land including the Fitzroy River, floodplains, lagoons, wetlands, salt pans, mountains and ridges and the coastline; ii. is responsive to the environmental characteristics and constraints of the land, and minimises impacts on natural features such as waterways, wetlands and remnant vegetation; iii. has legal and practical access to the road hierarchy; iv. is serviced by infrastructure that is commensurate with the needs of the use; and v. maximises energy efficiency and water conservation;	The proposed development is an extension to an existing extractive industry operation (Stanwell Quarry) and will not detract from the scenic landscape features of any rural land. The proposed quarry pit extension area has been designed to ensure it minimises impacts to existing waterways on the site and will not cause any unreasonable impacts to any matters of environmental significance (refer **Attachment 9 – Ecological Assessment Report**). The Stanwell Quarry currently gains access via Power Station Road and is adequately serviced by infrastructure. No changes to these arrangements are proposed. Water management has been identified as a primary consideration for the proposed development and a Water Quality Management Plan has been prepared for the site and included as Section 4.2 of the Site Based Management Plan ('SBMP') (refer **Attachment 7 – Site Based Management Plan**). The objective of the Water Quality Management Plan is to ensure that water resources are utilised efficiently on the site as part of the quarry operation and the quality of water leaving the site does not impact on the environmental values downstream of the Stanwell Quarry.
(c) non-rural uses may be appropriate where they do not detract from the productivity or residential amenity of rural areas and can demonstrate: i. a direct relationship with the rural use in the immediate locality; or ii. the potential to make a contribution to primary production or the diversification of rural industries; or iii. a need to be remote from urban uses as a result of their impacts; or	The proposed development is an extension to an existing extractive industry operation (Stanwell Quarry) and therefore, has a direct relationship with an existing rural use. The nearest sensitive receivers are located approximately 3.5 kilometres north-east of the proposed extension area and are not anticipated to be negatively impacted by the proposed development given the separation distance and the onsite

iv. they cannot be located in an urban area (for example, due to land area requirements);	controls and management measures to be implemented in accordance with the SBMP.
(d) transport and freight uses, which do not meet the definition of a home-based business, are not established in the rural zone;	The Stanwell Quarry is an existing operation and the proposed development is for an extension to the extraction area only, no changes to the extraction volumes, material haulage or general operation of the quarry are proposed.
(e) development does not alienate or impact on the productive agricultural capacity of rural areas and agricultural land is protected from incompatible development;	The area for the proposed quarry footprint extension is not considered to be productive agricultural land
(f) all rural land is maintained in large land holdings to protect the agricultural production capacity. In this regard, the reconfiguration of land only occurs when lot size is 100 hectares unless otherwise stated in a precinct;	No reconfiguring a lot is proposed.
(g) animal keeping (being kennels and catteries), intensive animal industries, intensive horticulture, aquaculture and rural industries establish where they: i. are located on sites that are large enough to accommodate appropriate buffering to sensitive land use(s), residential, township and emerging community zones. Intensive animal industries are preferred in proximity to the lower Fitzroy River, west of Ridgelands; ii. do not cause adverse impacts on sensitive land use(s) in relation to traffic, noise and air quality; iii. do not cause a negative impact on water quality; iv. protect natural, scenic and environmental values; v. do not diminish the productive capacity of other land nearby; vi. gain access from roads which are constructed to accommodate the traffic generated by the use; and vii. are not located in areas identified on the agricultural land classification (ALC) overlay maps (except for intensive horticulture);	No animal keeping, intensive animal industries, intensive horticulture, aquaculture or rural industries are proposed.
(h) Rural workers' accommodation is appropriate where: i. directly associated with the primary rural use undertaken at the site; ii. compatible with the rural character of the zone; iii. not compromising the existing or potential future operation of rural uses on adjoining lots; and iv. not located in areas identified on the agricultural land classification (ALC) overlay maps;	No rural workers' accommodation is proposed.
(i) urban and rural residential development is contained within the designated growth areas and does not expand into the rural zone;	No urban or rural residential development is proposed.

(j) sensitive land use(s) are adequately separated from animal keeping (being kennels and catteries), intensive animal industry, aquaculture, rural industry, and industrial zoned areas (including the Gracemere industrial area, Stanwell power station, Bajool explosives reserve and Bouldercombe brickworks);	The nearest sensitive receivers are located approximately 3.5 kilometres north-east of the proposed extension area and are not anticipated to be negatively impacted by the proposed development.
(k) renewable energy facilities are located on sites that are large enough to accommodate appropriate buffering from sensitive land use(s) and minimise adverse impacts on the natural environment;	No renewable energy facilities are proposed.
(l) extractive industries (including Marmor limeworks) on rural land are protected from encroachment by incompatible uses;	The proposed development is for an extension to an existing extractive industry (Stanwell Quarry).
(m) extractive industry minimises environmental and traffic impacts. Once the operation has ceased the site is rehabilitated;	
(n) aquaculture activities may be integrated with horticulture operations, where benefits of diversification are evident and there are no adverse impacts on amenity, ecological values and existing fish habitats; and	No aquaculture activities are proposed.
(o) the establishment of two (2) precincts within the zone where particular requirements are identified: i. Alton Downs precinct; and ii. Cropping and intensive horticulture precinct.	No new precincts are proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Where involving a new building or expansion to an existing building			
Built form			
PO1 Development does not adversely impact on the rural character of the locality, having regard to the scale and visibility of buildings.	**AO1.1** The height of new buildings and structures does not exceed two (2) storeys and ten (10) metres above ground level, excluding silos, windmills and similar structures ancillary to rural uses. Note—Building heights on the airport obstacle	**NA**	No new buildings or structures are proposed. The existing buildings and structures on site will continue to be used in the operation of the Stanwell Quarry.

Performance outcomes	Acceptable outcomes		Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	limitation surface map OM-2A prevail over building heights detailed in the zone codes.			
Aquaculture				
PO2 Aquaculture that is low impact in nature is located and designed on sites of sufficient size and dimension, to minimise adverse impacts on the amenity, water quality and ecological values.	**AO2.2**1 Aquaculture activities using ponds or tanks that are less than or equal to ten (10) hectares in total water surface area are carried out in accordance with the Department of Agriculture and Fisheries accepted development requirements for material change of use that is aquaculture, as updated from time to time.		**NA**	The proposed development is not for aquaculture.
Dwelling house and dwelling unit				
PO3 Development does not compromise the continued operation of an intensive animal industry, extractive industry, or a similar potential use on neighbouring rural land.	**AO3.1** Development: (a) is set back a minimum of twenty (20) metres from all site boundaries; and (b) is separated from an existing or approved: (i) intensive animal industry by a minimum of 1,000 metres; and (ii) extractive industry operation as follows:		**NA**	The proposed development is not for a dwelling hours or dwelling unit.
	Operation	**Separation distance**		
	Extractive industry operation involving blasting	1,000 metres		

Performance outcomes	Acceptable outcomes		Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	A hard rock extractive industry	500 metres		
	A sand and gravel extractive industry	200 metres		
	A designated haul route	100 metres		
	AND **AO3.2** Where a secondary dwelling is proposed, that dwelling: (a) is contained within the same lot; and (b) is no more than eighty (80) square metres gross floor area.		**NA**	Refer to response AO3.1 above.
PO4 Dwellings have adequate access to services to ensure the safety and well-being of residents and the water supply is adequate for the current and future needs of the development.	**AO4.1** A dwelling: (a) has a legal access to a constructed road; and (b) where within a water supply area has a legal connection to Council's reticulated water supply. Editor's note—A constructed road can be sealed, graded or gravel.		**NA**	Refer to response AO3.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	Editor's note—Where development is located outside of the water supply area refer to the requirements under the Plumbing Code of Australia.		
Caretaker's accommodation			
PO5 The development does not compromise the productivity of the use.	**AO5.1** No more than one (1) caretaker's accommodation is established on the site.	**NA**	No caretaker's accommodation is proposed.
PO6 A caretaker's accommodation has adequate access to services to ensure the safety and well-being of residents and the water supply is adequate for the current and future needs of the development.	**AO6.1** A caretaker's accommodation: (a) has a legal access to a constructed road; and (b) where within a water supply area has a legal connection to Council's reticulated water supply. Editor's note—A constructed road can be sealed, graded or gravel. Editor's note—Where development is located outside of the water supply area refer to the requirements under the Plumbing Code of Australia.	**NA**	Refer to response AO5.1 above.
Home-based business			
PO7 Development for a home-based business is operated, designed and sited in a manner that:	**AO7.1** The home-based business has a maximum gross floor area of 100 square metres.	**NA**	The proposed development does not include a home-based business.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) is an appropriate scale and intensity; (b) is integrated with the primary use of the site for a dwelling house; (c) does not adversely affect the safety and private recreation needs of adjoining premises; (d) does not adversely affect the streetscape and street function; and (e) does not compromise the character and amenity of the surrounding area by way of noise, light, dust, fumes, vibration, odour or storage of potentially hazardous materials.	**AND**		
	AO7.2 The home-based business is carried out within an existing building or structure. Note—This does not include the parking of vehicles. **AND**	**NA**	Refer to response AO7.1 above.
	AO7.3 Hours of operation are between the hours of 07:00 and 19:00 Monday to Saturday and 08:00 and 19:00 Sunday and public holidays (except for a bed and breakfast accommodation or home-based child care). **AND**	**NA**	Refer to response AO7.1 above.
	AO7.4 The home-based business involves a minimum of one (1) resident of the dwelling. **AND**	**NA**	Refer to response AO7.1 above.
	AO7.5 A maximum of one (1) worker, not residing in the dwelling house, is employed in the home-based business.	**NA**	Refer to response AO7.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AND		
	AO7.6 The home-based business contains visitor parking within the site. **AND**	**NA**	Refer to response AO7.1 above.
	AO7.7 The home-based business where for bed and breakfast accommodation: 1. the combined total number of guests and permanent residents does not exceed twelve (12) persons at any one time; and 2. guests stay a maximum of fourteen (14) consecutive nights. **AND**	**NA**	Refer to response AO7.1 above.
	AO7.8 Goods or services for sale or hire are not displayed where they are visible from the street frontage or an adjoining residential premise. **AND**	**NA**	Refer to response AO7.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AO7.9 No more than one (1) commercial vehicle is associated with the business and the vehicle does not exceed a gross vehicle mass of 4.5 tonnes tare weight unless associated with a home-based business involving heavy vehicles. Editor's note—Refer to provisions under additional outcomes for home-based business involving heavy vehicles. **AND**	**NA**	Refer to response AO7.1 above.
	AO7.10 The home-based business does not generate traffic exceeding ten (10) vehicle trips per day and the trips are not by a vehicle exceeding a gross vehicle mass of 4.5 tonnes tare weight. **AND**	**NA**	Refer to response AO7.1 above.
	AO7.11 Noise levels do not exceed acoustic quality objectives under the *Environmental Protection (Noise) Policy 2008,* as updated from time to time.	**NA**	Refer to response AO7.1 above.
Additional outcomes for home-based business involving heavy vehicles			
PO8 Development does not compromise the character and amenity of the surrounding area	**AO8.1** A maximum of two (2) heavy vehicles and two (2) heavy trailers are stored on site at any one time.	**NA**	Refer to response AO7.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
by way of noise, light, dust, fumes, vibration, odour or storage of potentially hazardous materials.	**AND**		
	AO8.2 Heavy vehicles and heavy trailers: (a) each heavy vehicle or heavy trailer does not exceed a gross vehicle mass of more than 4.5 tonnes; (b) are not started or manoeuvred on site between the hours of 22:00 and 06:00, or left running unattended for any period up to five (5) minutes; (c) if used for the transport of cattle or waste disposal, are stored a minimum of 100 metres away from an adjoining dwelling; and (d) do not have a refrigeration unit running while on-site if within 100 metres of a sensitive land use on an adjoining lot. **AND**	**NA**	Refer to response AO7.1 above.
	AO8.3 The business does not include the loading or unloading of vehicles or storage of goods. **AND**	**NA**	Refer to response AO7.1 above.
	AO8.4 The site has direct access to a minor urban	**NA**	Refer to response AO7.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	collector road or higher order road, but not to a state controlled road. **AND**		
	AO8.5 Heavy vehicles are stored onsite and located a minimum distance of: (a) twenty (20) metres from the frontage; and (b) fifteen (15) metres from side and rear boundaries. **AND**	**NA**	Refer to response AO7.1 above.
	AO8.6 Only minor maintenance is carried out on the property and does not involve major body work and mechanical repairs.	**NA**	Refer to response AO7.1 above.
Roadside stall			
PO9 A roadside stall: (a) does not impact on the amenity of adjoining land uses and the surrounding area; (b) does not adversely affect the safety and efficiency of the road network; (c) is ancillary to the farming use conducted on the same site; and (d) sells only fresh produce grown locally.	**AO9.1** Any structure used for a roadside stall: (a) has a maximum floor area of twenty (20) square metres; (b) is located entirely within the property and not on the road reserve; and (c) is set back from any boundary adjoining residential premises a minimum of six (6) metres.	**NA**	No roadside stalls are proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AND		
	AO9.2 Site **access, car parking and storage areas:** (a) are located entirely within the property and not on the road reserve; and (b) use the same driveway as the primary property access. **AND**	**NA**	Refer to response AO9.1 above.
	AO9.3 The roadside stall is associated with a rural use conducted on the same site.	**NA**	Refer to response AO9.1 above.
Rural workers' accommodation			
PO10 The amenity of the rural workers' accommodation is not adversely impacted upon and appropriately separated from intensive rural and industrial uses.	**AO10.1** On-site cabins or dwellings housing workers are sited no closer than 250 metres to intensive rural uses and industrial uses.	**NA**	No rural worker's accommodation is proposed.
PO11 The rural workers' accommodation has adequate access to services to ensure the safety and well-being of occupants and the water supply is adequate for the current and future needs of the development.	**AO11.1** Rural workers' accommodation: (a) has a legal access to a constructed road; and (b) where within a water supply area has a legal connection to Council's reticulated water supply.	**NA**	Refer to response AO10.1

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	Editor's note—A constructed road can be sealed, graded or gravel. Editor's note—Where development is located outside of the water supply area refer to the requirements under the Plumbing Code of Australia.		
Effects of development			
PO12 Outdoor lighting maintains the amenity of any adjoining residential zoned premises and does not adversely impact the safety of vehicles or pedestrians on the adjoining streets as a result of light emissions, either directly or by reflection.	**AO12.1** Outdoor lighting is designed, installed and maintained in accordance with the parameters and requirements of the Australian Standard AS 4282 — Control of the obtrusive effects of outdoor lighting, as updated from time to time.	**NA**	No additional or changed outdoor lighting is proposed.
Where in the Alton Downs precinct Note—Where acceptable outcomes in this section vary from this code, the precinct based acceptable outcomes take precedence.			
PO13 Residential uses are sufficiently separated from road frontages in order to protect the amenity of residents and to ensure the character of the area is maintained.	**AO13.1** A dwelling house is setback a minimum of six (6) metres from front boundaries. Note—There is no specific setback to any other boundary.	**NA**	The site is not located in the Alton Downs precinct.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
General			
PO14 Development that does not involve rural uses: (a) is located on the least productive parts of a site and not on land identified on the agricultural land classification (ALC) overlay maps; (b) does not restrict the ongoing safe and efficient use of nearby rural uses; and (c) is adequately separated or buffered where it is likely to be sensitive to the operational characteristics associated with rural uses, rural industries or extractive industries. Editor's note—Agricultural land classified as Class A or Class B is shown on the agricultural land classification overlay map OM-13. Editor's note—Applicants should have regard to the State Planning Policy - State Interest Guideline - Agriculture.	No acceptable outcome is nominated.	**PO**	The site is not identified on the ALC and does not restrict the ongoing use of nearby rural land. The proposed operation is well separated from nearby sensitive land uses (approximately 3.5 kilometres).
PO15 Uses that require isolation from urban areas are accommodated only where: (a) they cannot be more appropriately located in an industrial or other relevant zone;	No acceptable outcome is nominated.	**PO**	The proposed development is for an extension to the existing Stanwell Quarry operation which is appropriately located to ensure potential impacts on sensitive receivers will be minimised. The nearest sensitive receivers are located approximately 3.5 kilometres north-east of the

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(b) they can be adequately separated from sensitive land use(s) (whether or not in the rural zone); and (c) potential impacts can be appropriately managed. Editor's note—Applicants seeking approval for intensive animal industries are to refer to State Planning Policy – State Interest Guideline – Agriculture and consult with the relevant state government department prior to the lodgement of a development application. Council may require a study that, amongst other matters, identifies how the development is in accordance with Environmental Protection (Air) Policy 2008 or Environmental Protection (Noise) Policy 2008.			proposed extension area. This separation distance, along with the implementation of operational controls and management measures, will ensure that potential impacts on sensitive receivers as a result of the quarry operation are minimised. These measures have been included in the various management plans within the SBMP (refer **Attachment 7 – Site Based Management Plan**).
PO16 Ecological values, habitat corridors and soil and water quality are protected, having regard to: (a) maximisation of vegetation retention and protection of vegetation from the impacts of development; (b) avoidance of potential for erosion and minimisation of earthworks; (c) retention and protection of natural drainage lines and hydrological regimes; and	No acceptable outcome is nominated.	**PO**	The Matters of State Environmental Significance ('MSES') relevant to the site are MSES Regulated Vegetation (essential habitat) and MSEs wildlife habitat (endangered or vulnerable). SHG completed detailed site surveys to ground-truth potential ecological values within the proposed extraction area and stated the following in relation to MSES at the site: *'The action proposes to remove vegetation which is currently mapped as MSES Wildlife Habitat*

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(d) avoidance of leeching by nutrients, pesticides or other contaminants, or potential for salinity.			*and VM Essential Habitat for the flora species, Cycas megacarpa (Figure 3). Additionally, this area of mapped MSES is also mapped as a high-risk trigger area under the NC Act, requiring assessment across the site adhering to the Flora Survey Guidelines – Protected Plants. These surveys were completed on 17th November 2020 by a suitably qualified person (see Appendix A) with details reported within a Protected Plant species report for the site. No specimens of Cycas megacarpa were detected onsite during comprehensive surveys, allowing for an exemption to be applied for under the NC Act. The fulfillment of these survey requirements, with no specimens detected onsite, suggests the clearing of this vegetation will avoid impacting on this particular Matter of State Environmental Significance (MSES)'.* Refer to **Attachment 12 – State Code 22 Response**. As such, impacts to MSES are understood to be not applicable to the development within the proposed extraction area. The proposed extraction area is adjacent to a MSES regulated vegetation (defined watercourse), which is categorised as a Stream Order 1 watercourse for the purpose of the VMA, and therefore the defining distance is

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
			10 m (DNRME 2020). The proposed extraction area has been situated to create a 20 m to 50 m buffer to this watercourse north of the proposed extraction area. The site is mapped as being subject to the Matters of Local Environmental Significance ('MLES') – General overlap in accordance with the *Rockhampton Regional Planning Scheme 2015*. SHG concluded the following generally in relation to ecological values at the site: *The current EA (EPPR00424513) is held across the entire Lot however, clearing is proposed for a minimal amount of this area. Presently, Lot 1 on RP616642 is predominantly mapped as remnant or regrowth vegetation with the exception of two small polygons of Category X non-remnant vegetation, one of which is included within the proposed clearing area (see Figure 3). In addition, the proposed clearing adjoins an easement parcel, which has been previously cleared and has the potential to be cleared at any time.* *Access roads to the site currently exist, with the clearing proposing to extend a pre-existing extraction area. Locating the proposed action in this area minimises the need to clear additional*

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
			areas for new access roads. Clearing within the proposed polygon maintains extensive remnant and mature regrowth vegetation to the north of the impact site, within 1RP616642, which continues to facilitate habitat connectivity east-west towards the conservation reserves as well as north-south through the site. *….Due to the extensive surveys being conducted onsite in accordance with the Queensland Flora Survey Guidelines - Protected Plants, failing to detect the species in addition to assessment of significant residual impacts to C. megacarpa (for which essential habitat is mapped), a significant residual impact is not expected to occur due to the proposed action.* Refer to **Attachment 12 – State Code 22 Response**. As such, impacts to ecological values within areas mapped as MLES – General are understood to be avoided for the proposed development within the proposed extraction area.
Animal keeping – kennels or catteries			
PO17 Animal keeping (being kennels or catteries) is sited, constructed and managed such that: (a) animals are securely housed;	**AO17.1** Animal keeping (being kennels or catteries) is located on a site having a minimum site area of three (3) hectares.	**NA**	The proposed development does not involve animal keeping.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(b) the use does not create a nuisance beyond the site boundaries; and (c) the use does not create adverse environmental impacts.	**AND**		
	AO17.2 Animal enclosures are set back a minimum of 250 metres from any sensitive land use. **AND**	**NA**	Refer to response AO17.1 above.
	AO17.3 Buildings used for animal keeping are: (a) constructed with impervious reinforced concrete floors; and (b) gravity drained to the effluent collection/treatment point. **AND**	**NA**	Refer to response AO17.1 above.
	AO17.4 Animals are kept in fenced enclosures that are located inside buildings at all times between the hours of 18:00 and 07:00. **AND**	**NA**	Refer to response AO17.1 above.
	AO17.5 A person who is responsible for the supervision of the operation of the development is accommodated on the premises at all times. **AND**	**NA**	Refer to response AO17.1 above.

Performance outcomes	Acceptable outcomes		Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AO17.6 Animal enclosures are set back to roads, streets and water resources as follows:		**NA**	Refer to response AO17.1 above.
	Location	Setback		
	Road frontages	50 metres		
	Top bank of creek, river, stream, wetland, edge of well, bore, dam, weir, intake or the like which provides potable water supply to the site or surrounds	100 metres		
	Top bank of dry or perennial gully	30 metres		
Aquaculture				
PO18 Aquaculture is located and designed on sites of sufficient size and dimension, to minimise adverse impacts on the amenity, water quality and ecological values and existing fish habits.	**AO18.1** Aquaculture activities using ponds or tanks that are greater than ten (10) hectares in total water surface area are carried out in accordance with State Planning Policy – State Interest Guideline – Agriculture, as updated from time to time.		**NA**	The proposed development is not for aquaculture.
Bulk landscape supplies, rural industry or wholesale nursery				
PO19 Development is located on sites: (a) of sufficient size, to minimise adverse impacts on the amenity of adjoining	**AO19.1** A minimum site area of two (2) hectares is required with at least fifteen (15) metre setback from any adjoining premises.		**NA**	The proposed development is not for bulk landscape supplies, rural industry or a wholesale nursery.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
land, in particular noise, odour, light and dust emissions; (b) where the operation is within the safe and effective design capacity of the road system; and (c) where the operation does not impact upon water quality.	**AND**		
	AO19.2 Sales, storage, handling, packaging and production areas are set back a minimum of: (a) 100 metres from any dwelling on surrounding land; (b) fifty (50) metres from state controlled roads and twenty (20) metres from all other roads; and (c) thirty (30) metres from top bank of creek, river, stream or wetland edge of well, bore, dam, weir, or intake that provides potable water. **AND**	**NA**	Refer to response AO19.1 above.
	AO19.3 Infrastructure and material storage areas are confined to free draining areas and sites on slopes not exceeding ten (10) per cent. **AND**	**NA**	Refer to response AO19.1 above.
	AO19.4 There is direct access to a minor urban collector or higher order road.	**NA**	Refer to response AO19.1 above.
Intensive animal industry			

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
PO20 Intensive animal industry uses are sited, constructed and managed such that: (a) animals are securely housed; (b) the use does not create a nuisance on adjoining sensitive land use(s); (c) buildings used for intensive animal industry are constructed with floors, that are gravity drained to the effluent collection/treatment point; (d) animal proof fencing or other appropriate barrier feature is provided of an appropriate height within the site to prevent the escape of animals; and (e) a person who is responsible for the supervision of the operation of the development is accommodated on the premises at all times. Editor's note—Applicants seeking approval for intensive animal industries are to refer to State Planning Policy – State Interest Guideline – Agriculture and consult with the relevant State government department prior to the lodgement of a development application. Council may require a study that, amongst other matters, identifies how the development is in accordance with Environmental Protection (Air) Policy	No acceptable outcome is nominated.	**NA**	The proposed development is not for intensive animal industry.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
2008 or Environmental Protection (Noise) Policy 2008.			
PO21 Intensive animal industry does do not detract from the amenity of a nearby sensitive land use and community related activities and are not visible from any road or other public view point.	No acceptable outcome is nominated.	**NA**	Refer to response PO20 above.
PO22 Intensive animal industry is not located within: (a) a declared catchment area; or (b) a declared groundwater area.	No acceptable outcome is nominated.	**NA**	Refer to response PO20 above.
PO23 Intensive animal industry has suitable access to road or rail infrastructure via a sealed road to an access point with a state controlled road.	No acceptable outcome is nominated.	**NA**	Refer to response PO20 above.
Intensive horticulture			
PO24 The region's water quality is protected from the inflow of waste water or run-off from intensive horticulture activities. Waste water or run-off from intensive horticulture: (a) is contained and treated so that nutrients and sediments can be removed from the water;	No acceptable outcome is nominated.	**NA**	The proposed development is not for intensive horticulture.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(b) where possible, treated water is re-used; and (c) waste water is only disposed of when acceptable nutrient levels are achieved. Editor's note—Applicants should have regard to the State Planning Policy Guideline – State Interest – Agriculture. Editor's note—The Environmental Protection (Water) Policy 2009 applies to intensive horticultural uses.			
PO25 Intensive horticulture activities are not located within: (a) a declared catchment area; or (b) a declared groundwater area.	No acceptable outcome is nominated.	**NA**	Refer to response PO24 above.
Outdoor sport and recreation or community use			
PO26 Development is provided primarily to service the needs of the surrounding rural area or is inappropriate in urban areas (as a result of amenity impacts or land area requirements). The development is located and designed to:	No acceptable outcome is nominated.	**NA**	The proposed development is not for an outdoor sport or recreation and community use.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) minimise adverse impacts on the agricultural productive capacity of the site and the locality; (b) minimise impacts on the amenity of the locality, in particular noise (including limiting the hours of operation), odour, light and dust emissions; and (c) operate within the safe and effective design capacity of the region's road system.			
Renewable energy facility – wind farms			
PO27 Wind farms are located, designed and operated to minimise impacts on the environment and residential amenity, having regard to such matters as shadow flicker, noise (including low frequency noise), avifauna, separation from dwellings and site boundaries and scenic amenity.	No acceptable outcome is nominated.	**NA**	The proposed development is not for a renewable energy facility.
Rural workers' accommodation, farm stay and tourism uses			
PO28 Tourism, short-term accommodation (farm stay), and rural workers' accommodation uses are: (a) associated with and compatible with rural production, natural resources and	No acceptable outcome is nominated.	**NA**	The proposed development is not for a rural workers' accommodation, farm stay or tourism use.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
scenic landscape features in the immediate vicinity; and (b) not located in areas identified on the agricultural land classification (ALC) overlay maps.			
Transport and freight uses			
PO29 Transport and freight uses, which do not meet the definition of a home based business involving (heavy vehicles), are not established in the rural zone.	No acceptable outcome is nominated.	**NA**	The proposed development is not a transport and freight use.
Effects of development			
PO30 Effective separation distances are provided to minimise conflicts with sensitive land use(s). Editor's note—Where potential conflicts between agricultural and sensitive land uses may occur, applicants should refer to State Planning Policy – State Interest Guideline – Agriculture. Applicants should consult with the relevant state government department prior to the lodgement of a development application.	No acceptable outcome is nominated.	**PO**	The proposed extension area is well separated from any sensitive land uses (approximately 3.5 kilometres).
PO31 Development does not unduly impact on the	No acceptable outcome is nominated.	**PO**	The proposed extension to the existing Stanwell Quarry will not impact on the existing amenity of

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
existing amenity and character of the locality having regard to: (a) the scale, siting and design of buildings and structures; (b) visibility of buildings and structures when viewed from roads and other public view points; and (c) any heritage places.			the area. The quarry is not visible from any public viewpoints or sensitive receptors.
PO32 Development responds sensitively to on-site and surrounding topography, drainage patterns, utility services, access, vegetation and adjoining land uses, such that: (a) any hazards to people or property are avoided; (b) any earthworks are minimised; (c) the retention of natural drainage lines is maximised; (d) the retention of existing vegetation is maximised; (e) leeching by nutrients, pesticides or other contaminants, or potential for salinity is minimised; (f) damage or disruption to sewer, stormwater and water infrastructure is avoided; and (g) there is adequate buffering, screening or separation to adjoining development.	No acceptable outcome is nominated.	**PO**	(a) The quarry will continue to be operated safely and will adhere to a number of operational management measures to ensure potential hazards are nullified and avoided (refer **Attachment 7 – Site Based Management Plan**). (b) No earthworks are proposed. (c) Natural drainage lines will be preserved where practicable. (d) Vegetation clearing will occur progressively, in line with operational needs. Vegetation clearing will be limited to what is absolutely necessary to facilitate the extension to the extraction area. (e) No nutrients, pesticides or other contaminants are proposed to be used as part of the quarry operation. Spill kits will be stored on site and all stormwater that enters the extraction area will be captured, stored and treating prior to release in line with the

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
			requirements of the existing environmental authority ('EA'). (f) The site is not connected to Council's sewer, stormwater or water infrastructure. (g) The proposed operation is well separated from the nearest adjoining development (approximately 3.5 kilometres).
PO33 Development is designed and managed so that it provides appropriate protection for community safety and health and avoids unacceptable risk to life and property.	No acceptable outcome is nominated.	**PO**	The Stanwell Quarry will continue to be operated safely to protect the community and avoid unacceptable risk to life and property.
Reconfiguring a lot			
PO34 The further subdivision of land is limited to reflect the suitability of the land for primarily grazing purposes and to protect water quality, environmental and landscape values.	**AO34.1** Unless otherwise stated in a precinct the minimum lot size is 100 hectares.	**NA**	The proposed development is not for Reconfiguring a Lot.
Where in the Alton Downs precinct Note—Where outcomes in this section vary from this code, the precinct based outcomes take precedence.			
PO35 Development: (a) is compatible with the residential amenity of the area and avoids impacts on surrounding dwellings; and	No acceptable outcome is nominated.	**NA**	The site is not located in the Alton Downs precinct.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(b) has adequate water supply and sewerage treatment and disposal.			
PO36 The subdivision of land reflects the desired character of the area being smaller rural lots for primarily residential purposes.	**AO36.1** The minimum lot size in the precinct is eight (8) hectares. **AND**	**NA**	Refer to response PO35 above.
	AO36.2 Newly created lots must have access to a sealed road where sequential connection or integration with an existing sealed road can be achieved.	**NA**	Refer to response PO35 above.
Where in the cropping and intensive horticulture precinct **Note—Where outcomes in this section vary from this code, the precinct based outcomes take precedence.**			
PO37 Rural industries are established only where associated with rural production in the immediate vicinity.	No acceptable outcome is nominated.	**NA**	The site is not located in the cropping and intensive horticulture precinct.
PO38 The subdivision of land is limited to protect the ongoing viability and productivity of existing and potential cropping and horticulture uses.	**AO38.1** The minimum lot size in the precinct is forty (40) hectares.	**NA**	Refer to response PO37 above.

Extractive Industry Code

Overall Outcomes	Response
(a) the layout, design, operation and management of the use minimises impacts upon the natural environment and sensitive land use(s), this includes impacts upon natural features and processes both on-site and on adjoining areas;	The proposed development is for an extension to the extraction area only, no changes to the material haulage or general operation of the existing Stanwell Quarry are proposed. The nearest sensitive receivers are located approximately 3.5 kilometres north-east of the proposed extension area. With the separation distances and implementation of appropriate on site management measures and operational controls, it is not anticipated that the proposed extension to the footprint of the Stanwell Quarry will result in adverse impacts to the natural environment or nearby sensitive receivers.
(b) haul routes meet the needs of the traffic generated by the use without compromising the safety and efficiency of the route;	The proposed development is for an extension to the extraction area only, no changes to the material haulage or general operation of the existing Stanwell Quarry are proposed.
(c) the use achieves an acceptable standard of visual amenity, by reducing visual intrusion onto residential zoned areas and sensitive land use(s); and	The nearest sensitive receivers are located approximately 3.5 kilometres north-east of the proposed extension area and are separated visually via existing topography between the dwellings and the extension area. No visual amenity impacts are anticipated.
(d) the site is rehabilitated (following the cessation of the use) to minimise the impacts upon the environment, improve visual amenity and landform layout and provide for a suitable land use following the completion of extraction.	Rehabilitation will be progressive and responsive to changing technologies and needs over the life of the quarry. The program for implementing rehabilitation works will primarily depend on the rate at which terminal batters/benches are reached. Rehabilitation will be integrated with the ongoing extractive operations so that drainage, soil management, earthmoving, sediment control and landscaping and revegetation works are undertaken with rehabilitation objectives in mind. The site will be rehabilitated in accordance with the requirements of the EA.

<table>
<tr><th>Performance outcomes</th><th colspan="2">Acceptable outcomes</th><th>Compliance
PO = Performance Outcome
AO = Acceptable Outcome
NA = Not Applicable</th><th>Comments</th></tr>
<tr><td colspan="5">Scale of use</td></tr>
<tr><td rowspan="6">PO1
Extractive industries are appropriately separated from urban areas and sensitive land uses to minimise visual and noise impacts.</td><td colspan="2">AO1.1
The extractive industry use is separated by the following distances from the nearest sensitive land use and residential zone, rural residential zone, emerging community zone:</td><td>AO</td><td>The operation is well separated from the nearest sensitive land uses (approximately 3.5 kilometres).</td></tr>
<tr><td>Operation</td><td>Separation distance</td><td></td><td></td></tr>
<tr><td>Extractive industry operation involving blasting</td><td>1,000 metres</td><td></td><td></td></tr>
<tr><td>A hard rock extractive industry</td><td>500 metres</td><td></td><td></td></tr>
<tr><td>A sand and gravel extractive industry</td><td>200 metres</td><td></td><td></td></tr>
<tr><td>A designated onsite haul route</td><td>100 metres</td><td></td><td></td></tr>
<tr><td>PO2
Where practical the extractive industry is to be screened from nearby sensitive land use(s) or residential zoned areas and from state controlled roads.</td><td colspan="2">AO2.1
A vegetated buffer, having a minimum width of thirty (30) metres, is to be provided along all boundaries of the site.

AND</td><td>AO</td><td>The site is well screened from nearby sensitive land uses via topography and existing native vegetation.</td></tr>
</table>

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AO2.2 No vegetation is cleared outside the resource/processing area (includes future approved stages) or haulage routes.	**AO**	Vegetation clearing will occur progressively, in line with operational needs. Vegetation clearing will be limited to what is absolutely necessary to facilitate the extension to the extraction area.
Effects of development			
PO3 The operation of the extractive industry ensures that noise impacts are minimised on the surrounding area.	**AO3.1** Blasting operations are limited to Monday to Friday between the hours of 09:00 to 17:00. **AND**	**AO**	Blasting will be limited to 9:00am to 3:00pm Monday to Friday, and 9:00am to 1:00pm on Saturdays in accordance with conditions of the EA.
	AO3.2 Extraction, crushing, screening, loading, operation of plant equipment, ancillary activities and haulage are limited to Monday to Saturday between the hours of 06:00 and 18:00. **AND**	**AO**	The hours of operation will remain unchanged being 6:00am to 6:00pm Monday to Saturday with no operations on Sundays or public holidays.
	AO3.3 Operations do not occur on Sunday or public holidays. **AND**	**AO**	Refer to response AO3.2 above.
	AO3.4 Maintenance of equipment and vehicles outside of normal operating hours is carried out so as not to cause nuisance to nearby sensitive land use(s).	**AO**	Maintenance will be undertaken in a manner that does not cause nuisance to the nearby sensitive land uses (approximately 3.5 kilometres)

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AND		
	AO3.5 Vibration levels do not exceed the acoustic quality objectives contained in the *Environmental Protection (Noise) Policy 2008*.	**AO**	The site is in a very rural setting with limited sensitive land uses in the adjacent areas (closest sensitive land use approximately 4.5 kilometres from operation). Notwithstanding this, a Noise Management Plan has been provided in Section 4.4 of the SBMP, which outlines measures to be implemented to manage and reduce potential vibration levels (refer **Attachment 7 – Site Based Management Plan**). The implementation of these management measures and condition of the existing EA will ensure the proposed operation meets the objectives within the *Environmental Protection (Noise) Policy 2008*.
PO4 The development minimises dust impacts upon adjoining properties.	**AO4.1** Internal roads are sealed and dust impacts are contained onsite. **AND**	**PO**	Internal haul roads will be a gravel surface and regularly maintained and dampened by a water cart to reduce the potential dust impacts on sensitive receivers. It is considered that these management measures, the conditions of the existing EA and the separation distance (3.5 kilometres) will ensure dust impacts on adjoining sensitive land uses are minimised.
	AO4.2 Materials carried by heavy vehicles are covered. **AND**	**AO**	Trailers of the trucks transporting material off site will be covered.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AO4.3 Air pollution levels do not exceed the air quality objectives contained in the *Environmental Protection (Air) Policy 2008*.	**AO**	An Air Quality Management Plan has been prepared for the site and is included as Section 4.1 of the SBMP (refer **Attachment 7 – Site Based Management Plan**). Compliance with this management plan and the conditions of the EA will ensure the operation meets the objectives within the *Environmental Protection (Air) Policy 2008*.
PO5 The development does not compromise public safety.	**AO5.1** Security fencing is provided for the full length of the perimeter of the site and around extractive industry stockpiles and operations.	**PO**	The site does not adjoin a public road frontage or publicly accessible roads. A lockable gate with signage at the entry of the site provides security.
PO6 On-site drainage is designed, constructed and maintained to: (a) prevent ponding in excavated areas; (b) avoid erosion; (c) prevent pollution of groundwater and surface water; and (d) provide opportunities to conserve and reuse water on the site.	**AO6.1** Banks and channels are constructed to divert stormwater runoff away from excavated areas. **AND**	**AO**	A Water Quality Management Plan has been prepared to control potential environmental impacts occurring as a result of land disturbance necessary for the site operation. (refer to Section 4.2 of **Attachment 7 – Site Based Management Plan**).
	AO6.2 Sediment basins are provided as required to detain stormwater runoff from disturbed areas such that there is no offsite discharge likely to cause environmental harm. **AND**	**AO**	Refer to response AO6.1 above.
	AO6.3 Bunding, treatment and disposal of wastes is	**AO**	Refer to response AO6.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	carried out such that no environmental harm is caused. **AND**		
	AO6.4 Lining or other suitable treatment of erosion prone areas is established and maintained at discharge points.	**AO**	Refer to response AO6.1 above.
PO7 Extraction works and rehabilitation are to be carried out to minimise the potential for impacts on the environment (such as from stormwater run-off and erosion) and to retain the basic natural qualities and appearance of the site.	**AO7.1** Disused buildings and structures are removed from the site after extraction is completed. **AND**	**AO**	All buildings, structures, plant and equipment will be removed at the cessation of the quarry operation and the site will be rehabilitated.
	AO7.2 The site is rehabilitated once operations have ceased in accordance with an approved rehabilitation plan.	**AO**	Site will be rehabilitated at the cessation of the quarry operation.
Parking, access and transport			
PO8 The transportation of materials from the site does not significantly impact upon the road system or sensitive areas.	**AO8.1** The haul route is along roads that are sealed. **AND**	**AO**	The site gains access to the public road system via Power Station Road, which is sealed. No change to the existing haul route is proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AO8.2 Haul routes, except when located on a state controlled road, are more than 100 metres from any sensitive land use or land in a residential zone. **AND**	**AO**	The haulage route from the site entrance along Power Station Road to the Capricorn Highway does not contain any sensitive land uses within 100 metres. No change to the existing haul route is proposed.
	AO8.3 Road access is of a standard sufficient to carry traffic generated by the extractive industry. The applicant is to cover ongoing costs on Council's road networks that are generated by the extractive industry during the life of the operation.	**AO**	The proposed development is for an extension to the existing extraction area only. No changes to the existing road access or haulage vehicle numbers to and from the site is proposed. As such, assessment of the road condition and suitability for haulage vehicles is not considered to be necessary.

Access, Parking and Transport Code

Overall Outcomes	Response
(a) the function, safety and efficiency of the transport network is optimised;	The proposed development is for an extension to the extraction area only, no changes to the material haulage or general operation of the existing Stanwell Quarry are proposed.
(b) pedestrians and cyclists are provided with a high level of accessibility which is equitable, safe and convenient;	No pedestrian or cyclist access to the site is proposed.
(c) on-site access, transport and parking facilities are integrated with external walking and cyclist networks and public transport nodes;	There are no walking or cyclist networks, or public transport nodes accessible from the site.
(d) the use of public transport is facilitated wherever practicable;	There are no public transport facilities on Power Station Road available for the Stanwell Quarry operation.
(e) vehicle parking and access is provided, which is functional and sufficient to meet the demand likely to be generated by the development;	No change to the existing vehicle parking or site access is proposed. These areas will continue to support the operation of the Stanwell Quarry.
(f) vehicle parking and access achieves a high standard of urban design and integration with the function and appearance of the development; and	The site is located in a rural area off Power Station Road which provides access to the Stanwell Power Station and another extractive industry operation. The existing vehicle access to the site is commensurate with the surrounding landscape and is considered to be appropriate for the land use and setting.
(g) adverse impacts on the environment and the amenity of the locality are avoided.	No change to the existing site access or parking areas is proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Access driveways			
PO1 Access driveways are located to avoid conflicts and designed to operate efficiently and safely, taking into account: (a) the size of the parking area;	**AO1.1** Access driveways are not located within: (a) twenty–five (25) metres of a signalised road intersection;	**AO**	The existing access driveway is not located within 25 metres of a signalised road intersection, 10 metres of an un-signalised road intersection, or 1 metres of any street signage, power poles, street lights, manholes, stormwater gully pits or other Council asset. No

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(b) the volume, frequency and type of vehicle traffic; (c) the need for some land uses (for example hospitals) to accommodate emergency vehicle access; (d) the type of use and the implications on parking and circulation, for example long-term or short-term car parking; (e) frontage road function and conditions; and (f) the capacity and function of the adjoining street system.	(b) twenty (20) metres of an un-signalised road intersection in an industrial or centres zone or ten (10) metres otherwise; and (c) one (1) metre of any street signage, power poles, street lights, manholes, stormwater gully pits or other Council asset.		change to the existing access arrangement is proposed.
PO2 Access driveways do not disrupt existing road or footpath infrastructure.	**AO2.1** Access driveways: (a) do not require the modification, relocation or removal of any infrastructure including street trees, fire hydrants, water meters and street signs; (b) do not front a traffic island, speed control device, car parking bay, bus stop or other infrastructure within the road carriageway; (c) must be sealed and to a formed road; (d) are not constructed over an access point to equipment under the control of a regulatory authority, including storm water pits, water meters, hydrants and telephone pits; and (e) are raised or lowered to match the surface level of the driveway, where an access	**AO**	No changes to the existing site access driveway are proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	chamber is to be incorporated within the driveway.		
PO3 Access driveways are designed and constructed so as to: (a) enable safe and functional vehicular access from the street to the property; and (b) not cause a change in the level of a footpath.	**AO3.1** Access driveways are constructed in compliance with the Capricorn Municipal Development Guidelines.	**NA**	No change to the existing access driveway is proposed. The proposed development is for an extension to the existing extraction area only. Based on existing haulage operations, utilising a truck and dog trailer combination vehicle, it is considered that the site access can cater for the wheel paths associated with the proposal.
PO4 A driveway does not allow water to pond adjacent to any buildings or cause water to enter a building.	**AO4.1** A driveway has a minimum cross fall of one (1) metre (vertical) to 100 metres (horizontal) away from all adjoining buildings.	**NA**	Refer to response AO3.1 above.
Parking			
PO5 Provision is made for on-site vehicle parking: (a) to meet the demand likely to be generated by the development; and (b) to avoid on-street parking where that would adversely impact on the safety or capacity of the road network or unduly impact on local amenity. Editor's note—SC6.6 — Car parking	**AO5.1** AO5.1.1 On-site car parking is provided at the rates set out in Table 9.3.1.3.2 of the access, parking and transport code. OR AO5.1.2 Where a change of use of existing premises is proposed and there is no increase in the gross	**AO**	The proposed extension to the extraction area will not increase the existing gross floor area for the quarry operation. Therefore, the existing number of on-site car parks are to be retained.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
contributions planning scheme policy prescribes circumstances under which an applicant can satisfy PO5.	floor area, the existing number of on-site car parks is retained or increased. **AND**		
	AO5.2 All parking, loading and manoeuvring facilities for visitors and employees to be located on-site. **AND**	**AO**	No change to the existing parking, loading and manoeuvring areas are proposed, which are all located on-site.
	AO5.3 Manoeuvring facilities to be of adequate dimensions to prevent any queuing in a roadway.	**AO**	The existing manoeuvring facilities on site are of a size and dimension that ensure no queuing in a roadway will occur. No changes to the existing manoeuvring facilities on site is proposed.
PO6 Parking and servicing facilities are designed to meet user requirements.	**AO6.1** Parking spaces, access and manoeuvring facilities, loading facilities and connections to the transport network are sealed and designed in accordance with Australian Standard AS 2890.	**PO**	No change to the parking spaces, access and manoeuvring facilities, loading facilities and connections to the transport network are proposed. The proposed development is for an extension to the extraction area only, no changes to the extraction volumes, material haulage or general operation of the quarry are proposed.
PO7 Sites with more than one (1) road frontage (excluding laneways) gain access only from the lower order road, except if it will	No acceptable outcome is nominated.	**NA**	The site does not have more than 1 road frontage.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
introduce traffic generated by a non–residential use into a street that is in a residential zone.			
PO8 Parking areas are illuminated in a manner that maximises user safety but minimises the impacts on adjoining residents.	**AO8.1** Parking areas for uses that operate at night are illuminated in accordance with the requirements of Australian Standard AS 1158. **AND**	**NA**	No night time operations are proposed.
	AO8.2 Lighting used in parking areas does not cause an environmental nuisance and complies with Australian Standard AS 4282.	**NA**	Refer to response AO8.1 above.
PO9 Car parking areas, pathways and other elements of the transport network are designed to enhance public safety by discouraging crime and antisocial behaviour, having regard to: (a) provision of opportunities for casual surveillance; (b) the use of fencing to define public and private spaces, whilst allowing for appropriate sightlines; (c) minimising potential concealment points and assault locations; (d) minimising opportunities for graffiti and other vandalism; and	No acceptable outcome is nominated. Editor's note—Refer to Crime Prevention Through Environmental Design (CPTED) guidelines for Queensland for guidance.	**NA**	The proposed development is for an extension to the extraction area only, no car parking areas, pathways or other elements of the transport network are proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(e) restricting unlawful access to buildings and between buildings.			
PO10 Parking and servicing areas are kept accessible and available for their intended use at all times during the normal business hours of the activity.	No acceptable outcome is nominated.	**PO**	Parking and servicing areas will be kept accessible at all times during the quarry's hours of operation.
Transport impact Editor's note—Applicants should note that the Department of Transport and Main Roads may have additional requirements.			
PO11 Development contributes to the creation of a transport network which is designed to: (a) achieve a high level of permeability and connectivity for all modes of transport, including pedestrians and cyclists, within the development and to the surrounding area; and (b) encourage people to walk, cycle or use public transport to and from the site instead of using a car.	No acceptable outcome is nominated. Editor's note—Refer to SC6.19 – Structure plan planning scheme policy for guidance.	**NA**	The proposed development is for an extension to the extraction area only, no changes to the material haulage or general operation of the quarry are proposed. As such, no change to the existing transport network is necessary.
PO12 Development is located on roads that are appropriate for the nature of traffic (including vehicles, pedestrians and cyclists) generated, having regard to the safety and efficiency of the transport network.	**AO12.1** Traffic generated by the development is safely accommodated within the design capacity of roads as provided in SC6.15 — Road infrastructure and hierarchy planning scheme policy.	**AO**	The traffic currently generated by the Stanwell Quarry is safely accommodated by the design capacity of Power Station Road and the Capricorn Highway (State controlled road). Based on the low background traffic volumes along Power Station Road, it is anticipated that the quarry will have a minimal impact on the

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AND		mid-block section of Power Station Road, with adequate capacity expected to be available to cater for the additional heavy vehicles. Given that the proposal will only impact on the through movements at each intersection along Power Station Road, the impact of the proposed haulage on the operation (including vehicle delay) of the relevant intersections on the local road network can be deemed to be negligible (refer **Attachment 8 – Traffic Impact Assessment**).
	AO12.2 A road or street does not connect with another road or street that is more than two (2) levels higher or lower in the road hierarchy. **AND**	**AO**	No change to the current road and street network is proposed.
	AO12.3 The existing infrastructure fronting the proposed development is upgraded in accordance with SC6.15 — Road infrastructure and hierarchy planning scheme policy and Capricorn Municipal Development Guidelines.	**NA**	It has been determined that the Power Station Road / Stanwell Quarry access can cater for the wheel paths of the haulage vehicle movements, with no widening required along Power Station Road or at each intersection along its haulage route, including the Capricorn Highway / Power Station Road intersection to accommodate the proposal (refer **Attachment 8 – Traffic Impact Assessment**).
PO13 Where the nature of the development creates a	No acceptable outcome is nominated.	**NA**	The proposed development will not generate a demand for a set down and pick up facilities.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
demand, provision is made for set down and pick-up facilities by bus, taxis or private vehicle, which: (a) are safe for pedestrians and vehicles; (b) are conveniently connected to the main component of the development by pedestrian pathway; and (c) provide for pedestrian priority and clear sightlines.			
Site access			
PO14 Development does not impact on the safety, operation or function of the road network or system.	**AO14.1** Vehicle manoeuvring into and from the site for all vehicles is designed in accordance with the Australian Standard AS 2890, as updated from time to time. **AND**	**NA**	MCE have confirmed that the existing site access can cater for the proposal and as such, no changes to the existing site access is proposed (refer **Attachment 8 – Traffic Impact Assessment**).
	AO14.2 No direct property access is gained to a highway, main road, urban arterial or sub arterial road as defined in SC6.15 — Road infrastructure and hierarchy planning scheme policy other than via a service road or a joint access arrangement with other sites. **AND**	**AO**	No change to the current property access is proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AO14.3 Development that generates greater than 100 vehicle movements per day does not gain access to or from an urban access place or urban access streets as defined in SC6.15 — Road infrastructure and hierarchy planning scheme policy.	**AO**	Power Station Road is not identified as an urban access place or urban access street.
PO15 Development facilitates the orderly provision and upgrading of the transport network or contributes to the construction of transport network improvements.	No acceptable outcome is nominated.	**PO**	A contribution rate of approximately 20 cents per tonne is proposed to offset the potential impacts of the proposed development on Power Station Road.
PO16 On-site transport network infrastructure integrates safely and effectively with surrounding networks.	**AO16.1** Intersections, connections and access arrangements are designed in accordance with the Capricorn Municipal Development Guidelines and Australian Standard AS 2890.	**AO**	MCE have confirmed that the existing site access can cater for the proposal and as such, no changes to the existing site access is proposed (refer **Attachment 8 – Traffic Impact Assessment**). As such, no changes to the existing access arrangement are proposed.
Pedestrian and cyclist facilities			
PO17 Development provides safe and convenient pedestrian and cycle movement to the site and within the site having regard to desire lines, users' needs, safety and legibility.	**AO17.1** Pedestrian and cyclist movement are designed in compliance with the Capricorn Municipal Development Guidelines and Australian Standard AS 2890 — Parking facilities.	**NA**	No pedestrian or cyclist facilities are proposed.
PO18 Provision is made for adequate bicycle parking	No acceptable outcome is nominated.	**NA**	Refer to response AO17.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
and end of trip facilities, to meet the likely needs of users and encourage cycle travel.	Editor's note—Provisions are made for parking and end of trip facilities in accordance with the SC6.4 — Bicycle network planning scheme policy.		
Servicing			
PO19 Refuse collection vehicles are able to safely access on-site refuse collection facilities.	**AO19.1** Refuse collection areas are provided and designed in accordance with the waste management code and Australian Standard AS 2890.	**AO**	No change to the existing refuse collection arrangements is proposed.

Stormwater Management Code

Overall Outcomes	Response
(a) acceptable levels of stormwater run-off quality and quantity are achieved by applying water sensitive urban design principles;	Water management has been identified as a primary consideration for the proposed development and a Water Quality Management Plan has been prepared for the site and included as Section 4.2 of the SBMP (refer **Attachment 7 – Site Based Management Plan**). The objective of the Water Quality Management Plan is to ensure that water resources are utilised efficiently on the site as part of the quarry operation and the quality of water leaving the site does not impact on the environmental values downstream of the Stanwell Quarry. Water quality will be regulated by conditions of the EA and the site's operator will be required to capture, treat and release waters in accordance with the EA.
(b) public health and safety are protected and development avoids damage or nuisance caused by stormwater flows;	The proposed extension area is well removed from any neighbouring properties and is not anticipated to impact on public health and safety.
(c) development includes a stormwater management system which minimises impacts on natural catchment hydrological processes;	A Water Quality Management Plan has been prepared for the site and included as Section 4.2 of the SBMP (refer **Attachment 7 – Site Based Management Plan**).
(d) development ensures that the environmental values of waterways are protected or enhanced;	The proposed quarry footprint extension has been designed and cited to avoid waterways and reduce the potential for impacts.
(e) development maintains or enhances the efficiency and integrity of the stormwater infrastructure network;	The site is not connected to the stormwater infrastructure network.
(f) the whole of life-cycle cost of stormwater infrastructure is minimised; and	All stormwater infrastructure will be contained within the site and all costs associated with the stormwater management infrastructure will be the responsibility of the operator.
(g) new development infrastructure is designed to support and complement existing and planning stormwater infrastructure.	The site is not connected to the stormwater infrastructure network.

Stormwater management – General

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Stormwater management – General			
PO1 Development provides a stormwater management system which achieves the integrated management of stormwater to: (a) ensure that flooding impacts do not increase, including upstream or downstream of the development site; (b) avoid net worsening of stormwater peak discharges and runoff volumes; (c) utilises the use of water sensitive urban design principles; and (d) ensure the site maximizes opportunities for capture and reuse. Editor's note—A stormwater management plan may be required to demonstrate compliance with the performance outcome.	**AO1.1** Development provides a stormwater management system which is designed in compliance with SC6.18— Stormwater management planning scheme policy, SC6.10 — Flood hazard planning scheme policy, Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff. **AND**	**AO**	Water management has been identified as a primary consideration for the proposed development and a Water Quality Management Plan has been prepared for the site and included as Section 4.2 of the SBMP (refer **Attachment 7 – Site Based Management Plan**).
	AO1.2 Stormwater is conveyed to a lawful point of discharge in accordance with the Queensland Urban Drainage Manual.	**AO**	Refer to response AO1.1 above.
PO2 Development provides a stormwater management system which: (a) has sufficient capacity to safely convey run-off taking into account increased run-off from impervious surfaces and flooding in local catchments;	**AO2.1** Development provides a stormwater management system which is designed in compliance with SC6.18 — Stormwater management planning scheme policy, Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff.	**AO**	Refer to response AO1.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(b) maximises the use of natural waterway corridors and natural channel design principles; and (c) efficiently integrates with existing stormwater treatments upstream and downstream.			
PO3 Development ensures that the location and design of stormwater detention and water quality treatment facilities: (a) minimise risk to people and property; (b) provide for safe access and maintenance; and (c) provide for the safe recreational use of stormwater management features.	**AO3.1** Development provides for stormwater detention and water quality treatment facilities which are located outside of a waterway. **AND**	**AO**	The proposed stormwater detention and treatment devices are located outside of the waterways on site (refer **Attachment 7 – Site Based Management Plan**).
	AO3.2 Development provides for stormwater detention in accordance with SC6.18 — Stormwater management planning scheme policy, Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff. **AND**	**AO**	Refer to response AO1.1 above.
	AO3.3 Development provides a stormwater quality treatment system which is designed in accordance with State Planning Policy – Water Quality.	**AO**	Refer to response AO1.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Environmental values			
PO4 Development and drainage works including stormwater channels, creek modification works, bridges, culverts and major drains, protect and enhance the environmental values of the waterway corridors and drainage paths and permit terrestrial and aquatic fauna movement. Editor's note—Compliance with the performance outcomes and acceptable outcomes should be demonstrated by the submission of a site-based stormwater management plan for development.	**AO4.1** Development ensures natural waterway corridors and drainage paths are retained. **AND**	**AO**	The proposed extension to the extraction area is not located in an identified waterway corridor or drainage path.
	AO4.2 Development incorporates the use of natural channel design principles in constructed components to maximise environmental benefits and waterway stability in accordance with the Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff. **AND**	**NA**	Natural channel design principles are not applicable to extractive industry operations.
	AO4.3 Development provides stormwater outlets into waterways, creeks, wetlands and overland flow paths with energy dissipation to minimise scour in accordance with the Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff.	**AO**	Erosion and sediment control devices will be implemented at the discharge points to reduce the risk of scour.
PO5 Development protects and enhances the environmental and water quality values of waterways, creeks and estuaries within or	No acceptable outcome is nominated.	**PO**	The stormwater runoff from disturbed areas, generated by (up to and including) a 24 hour storm event with an average recurrence interval of 1 in 5 years will be retained on site

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
external to the site. Editor's note—The State Planning Policy – Guideline – Water Quality and Section 9 of the *Environmental Protection Act 1994* define environmental values as 'a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety.'			or managed to remove contaminants before release. The release of waters must not have any other properties at a concentration that is capable of causing environmental harm. Settled / treated Stormwater that is controlled released from the site will minimise any adverse impacts on the receiving environment.
Overland flow path tenure			
PO6 All overland flow paths are maintained under tenure arrangements that facilitate efficient infrastructure and enhance environmental sustainability. Editor's note—As a guide, Council prefers that the location of Council owned assets are contained within a road reserve, drainage system is contained within a road reserve, drainage easement, drainage reserve, public reserve, public pathway, park or waterway corridor.	No acceptable outcome is nominated.	**NA**	There are no overland flow paths on the site.
Detention Systems			
PO7 Detention basins are designed, located and	**AO7.1** Detention basins are designed in accordance	**AO**	Detention basins and water quality treatment systems will be designed and constructed in

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
constructed on land solely dedicated for stormwater management.	with SC6.18 Stormwater management planning scheme policy.		accordance with relevant planning scheme policies.
PO8 Development ensures that location and design of stormwater detention and water quality treatment: (a) minimises risk to people and property; (b) provides for safe access and maintenance; and (c) minimises ecological impacts to creeks and waterways.	**AO8.1** Development provides a stormwater management system designed in accordance with SC6.10 Flood hazard planning scheme policy and SC6.18 Stormwater management planning scheme policy.	**AO**	Refer to response AO7.1 above.
PO9 Flood plain storage and function, and detention system functions are maintained. This shall include ensuring that: (a) detention system design does not remove floodplain storage; and (b) detention systems continue to operate effectively during a major storm event.	No acceptable outcome is nominated.	**AO**	The site is not located in and near the floodplain. As such, no impacts to flood plan storage or function are anticipated as a result of the proposed development.
PO10 Detention basins shall not be provided in locations that prevent easy access to or maintenance of the detention basin.	**AO10.1** The location of detention basins are in accordance with SC6.18 Stormwater management planning scheme policy.	**AO**	Refer to response AO7.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Efficiency and whole of life cycle cost			
PO11 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. Editor's note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for development.	No acceptable outcome is nominated.	**NA**	All stormwater infrastructure will be contained within the site and all costs associated with the stormwater management infrastructure will be the responsibility of the operator.
PO12 Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the: (a) existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades; (b) safe management of stormwater discharge from existing and future upslope development; and (c) implications for adjacent and down-slope development.	No acceptable outcome is nominated.	**NA**	Refer to response PO11 above.
PO13 Development provides proposed stormwater infrastructure which:	No acceptable outcome is nominated.	**NA**	Refer to response PO11 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) remains fit for purpose for the life of the development and maintains full functionality in the design storm event; and (b) can be safely accessed and maintained in a cost effective way.			
Erosion and sediment control			
PO14 Development ensures that all reasonable and practicable measures are taken to manage the impacts of erosion, turbidity and sedimentation, both within and external to the development site from construction activities, including vegetation clearing, earthworks, civil construction, installation of services, rehabilitation, revegetation and landscaping to protect: (a) the environmental values and water quality objectives of waters; (b) waterway hydrology; and (c) the maintenance and serviceability of stormwater infrastructure.	**AO14.1** Erosion and sediment control plan is to be designed and implemented in accordance with the Capricorn Municipal Development Guidelines.	**NA**	Extractive industry activities are regulated by DES under the Ep Act and require water management measures to be implemented as outlined and addresses in the SBMP.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Water quality within catchment areas			
PO15 For development proposals within the Fitzroy River sub-basin, relevant environmental values are recognised and enhanced, and relevant water quality objectives are addressed. Editor's note—Section 3.2 of Queensland Water Quality Guidelines 2009 identifies values for water quality for waters in the Central Coast Queensland region.	**AO15.1** Development complies with the provisions of the State Planning Policy – Guideline – Water Quality. **AND**	**NA**	The site is not located within a catchment area.
	AO15.2 Development adjoining the full supply height above the Fitzroy River Barrage includes the provision of an effective buffer that assists in filtering runoff, including: (a) a buffer distance of 100 metres to the water supply height of the barrage which excludes cropping or grazing of a low intensity nature; and (b) fencing and water troughs installed on the land to prevent encroachment of animals within 100 metres of the full supply height above the barrage.	**NA**	Refer to response AO15.1 above.
Protecting water quality			
PO16 The development is compatible with the land use constraints of the site for:	**AO16.1** Development is undertaken in accordance with a stormwater management plan that:	**AO**	A Water Quality Management Plan has been prepared for the site to control potential environmental impacts occurring as a result of land disturbance necessary for the site operation. The Water Quality Management

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) achieving stormwater design objectives; and (b) avoiding or minimising the entry of contaminants into, and transport of contaminants in stormwater.	(a) incorporates stormwater quality control measures to achieve the design objectives set out in the State Planning Policy – Guideline – Water Quality; (b) provides for achievable stormwater quality treatment measures reflecting land use constraints, such as soil type, landscape features (including landform), nutrient hazardous areas, acid sulfate soil and rainfall erosion potential; and (c) accounts for development type, construction phase, local landscape, climatic conditions and design objectives. Editor's note—A stormwater management plan includes the design, construction, operation, maintenance of the stormwater system. Editor's note—SC6.18 — Stormwater management planning scheme policy provides guidance on preparing a stormwater quality management plan.		Plan has been included as Section 4.2 of the SBMP (refer **Attachment 7 – Site Based Management Plan**).
Protecting water quality in existing natural waterways			
PO17 The waterway is designed for stormwater flow management, stormwater quality management and the following end use purposes:	No acceptable outcome is nominated.	**NA**	No waterways are proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) amenity including aesthetics, (b) landscaping and recreation; (c) flood management; (d) stormwater harvesting as part of an integrated water cycle management plan; (e) as a sustainable aquatic habitat; and (f) the protection of water environmental values.			
PO18 The waterway is located in a way that is compatible with existing tidal waterways.	**AO18.1** Where the waterway is located adjacent to, or connected to, a tidal waterway by means of a weir, lock, pumping system or similar: (a) there is sufficient flushing or a tidal range of more than 0.3 metres; or (b) any tidal flow alteration does not adversely impact on the tidal waterway; or (c) there is no introduction of salt water into freshwater environments.	**NA**	Refer to response PO17 above.
PO19 The construction phase for the waterway is compatible with protecting water environmental values in existing natural waterways.	**AO19.1** Erosion and sediment control measures are incorporated during construction to achieve design objectives set out in State Planning Policy – Guideline – Water Quality. Editor's note—Erosion and sediment control is to be designed and implemented in accordance with	**NA**	Refer to response PO17 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	the International Erosion Control Association Best Practice Erosion and Sediment Control Guidelines.		
PO20 Stormwater overflows from the waterway do not result in lower water quality objectives in existing natural waterways.	**AO20.1** Stormwater run-off entering non-tidal waterways is pre-treated prior to release in accordance with the guideline design objectives, water quality objectives of local waterways, and any relevant local area stormwater management plan.	**NA**	Refer to response PO17 above.

Waste Management Code

Overall Outcomes	Response
(a) development provides for adequate on-site waste management to deal with the expected volume and nature of waste generated by the development;	The proposed development is for an extension to the extraction area only, no changes to the existing operation of the Stanwell Quarry, including waste on-site waste management is proposed. Any waste generated, transported, or received as part of the quarry operation will continue to managed in a way that protects all environmental values by adhering to the Waste Management Plan (refer Section 4.6 of **Attachment 7 – Site Based Management Plan**).
(b) waste facilities are screened from view from adjoining lots, street and public spaces;	Refer to response (a) above. The waste facilities are located over 2.5km the nearest publicly accessible area.
(c) waste management is conducted in a safe and ecologically sustainable manner; and	Refer to response (a) above.
(d) waste facilities are located on-site in a manner which facilitates waste removal in a safe and efficient way.	Refer to response (a) above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Design of waste storage areas			
PO1 For on-site waste collection, waste storage areas are located and designed so that: (a) they are easily accessed and convenient to use; (b) sufficient space is provided for safe entry and exit and servicing by service vehicles without the need for manual handling; (c) sufficient height clearance is provided for the safe operation of both front and side bin lifting operations;	**AO1.1** Waste storage areas are designed and maintained in accordance with SC6.20 — Waste management planning scheme policy.	**AO**	No changes to the existing waste storage areas on site are proposed. Any waste generated, transported, or received as part of the quarry operation will continue to managed in a way that protects all environmental values by adhering to the Waste Management Plan (refer Section 4.6 of **Attachment 7 – Site Based Management Plan**).

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(d) they are clear of car parking bays, loading bays and similar areas; and (e) they are clear of footpaths and pedestrian access.			
Kerbside waste servicing			
PO2 Kerbside collection of waste containers ensures the safety and amenity of road and footpath users.	**AO2.1** Waste bins are located on the footpath so that: (a) bins are located one (1) metre apart from other bins and obstructions; (b) all bins are accommodated within the street frontage of the site; (c) a clear pedestrian access way two (2) metres wide is retained; and (d) bins are capable of being serviced by the collection vehicle travelling forward, without having to reverse the vehicle.	**NA**	The Stanwell Quarry operation does not have kerbside waste servicing.
PO3 Waste storage minimises adverse impacts on adjoining properties.	**AO3.1** Waste storage areas are: (a) integrated with the building design; or (b) set back a minimum of two (2) metres from any boundary; and (c) screened from neighbouring properties and the street by a fence of 1.8 metres minimum height; and	**AO**	No changes to the existing waste storage areas on site are proposed. Refer to response AO1.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	(d) not located directly adjoining dwelling units on the site and on neighbouring properties. **AND**		
	AO3.2 Waste bins are fitted with lids.	**AO**	Refer to response AO3.1 above.
PO4 Waste storage areas: (a) have a level area on impermeable, durable materials so that they are easily cleaned; and (b) have adequate clearance between and around waste storage bins to allow for manoeuvring and washing of bins.	No acceptable outcome is nominated.	**AO**	Refer to response AO3.1 above.
Water management			
PO5 Waste storage areas are designed to separate stormwater and wash-down water.	**AO5.1** Wash-down water drains to either the reticulated sewerage system or an on-site sewerage facility if not in a sewer area. **AND**	**PO**	The proposed development is for an extension to the extraction area only, no changes to the approved extraction volumes, material haulage or general operation of the quarry are proposed. All waste water will be directed to on site sewerage and waste water treatment devices.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AO5.2 Wash-down areas are: (a) provided with a tap and water supply; and (b) provided with a stormwater diversion valve and arrestor trap.	**PO**	Refer to response AO5.1 above.

Works Code

Overall Outcomes	Response
(a) premises are provided with a level of services which are appropriate to the intended character and function of the zone;	The proposed development is for an extension to the extraction area only, no changes to the existing operation of the Stanwell Quarry is proposed.
(b) risk to life and property is avoided;	Refer to response (a) above. The Stanwell Quarry will continue to be operated in accordance with relevant safety regulations and will ensure that risk to life of staff and site visitors is minimised.
(c) development does not detract from environmental values or from desired visual and amenity characteristics of the locality;	The quarry operation is well separated from the nearest sensitive receivers and is screened from view via vegetation and topography. With the implementation of appropriate on site management measures and operational controls, it is not anticipated that the proposed extension to the footprint of the Stanwell Quarry will result in adverse impacts to any environmental values or amenity characteristics.
(d) the integrity of existing infrastructure is maintained;	No change to the existing site infrastructure is proposed as part of the extension to the quarry footprint.
(e) access, parking, servicing and associated manoeuvring areas are designed to be safe, functional and meet the reasonable demands generated by the development;	Access, parking, servicing and associated manoeuvring areas will be design and constructed to meet the demands generated by the Stanwell Quarry.
(f) development facilitates an efficient provision of infrastructure and use of resources; and	Refer to response (d) above.
(g) whole of life cycle costs for infrastructure are minimised.	Refer to response (d) above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Access driveways			
PO1 Access driveways are located to avoid conflicts and designed to operate efficiently and safely, taking into account:	**AO1.1** New access driveways are not located within: (a) twenty–five (25) metres of a signalised road intersection;	**NA**	The proposed development does not include a new access driveway. The existing access driveway is not located within 25 metres of a signalised road intersection, 10 metres of an un-signalised road intersection, or 1 metres of

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) the size of the parking area; (b) the volume, frequency and type of vehicle traffic; (c) the need for some land uses (for example hospitals) to accommodate emergency vehicle access; (d) the type of use and the implications on parking and circulation for example long-term or short-term car parking; (e) frontage road function and conditions; and (f) the capacity and function of the adjoining street system.	(b) twenty (20) metres of an un-signalised road intersection in an industrial or centres zone or ten (10) metres otherwise; and (c) one (1) metre of any street signage, power poles, street lights, manholes, stormwater gully pits or other Council asset.		any street signage, power poles, street lights, manholes, stormwater gully pits or other Council asset. No change to the existing access arrangement is proposed.
PO2 Access driveways do not disrupt existing road or footpath infrastructure.	**AO2.1** New access driveways: (a) do not require the modification, relocation or removal of any infrastructure including street trees, fire hydrants, water meters and street signs; (b) do not front a traffic island, speed control device, car parking bay, bus stop or other infrastructure within the road carriageway; must be sealed and to a formed road; (c) are not constructed over an access point to equipment under the control of a regulatory authority, including	**NA**	The proposed development does not include a new access driveway. No change to the existing access arrangement is proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	stormwater pits, water meters, hydrants and telephone pits; and (d) where an access chamber is to be incorporated within the driveway, are raised or lowered to match the surface level of the driveway are provided with a trafficable lid.		
PO3 Access driveways and cross-falls within the verge are designed and constructed so as to: (a) enable safe and functional vehicular access from the street to the property; and (b) not cause a change in the level of a footpath.	**AO3.1** New access driveways and cross-falls within the verge are constructed in compliance with the Capricorn Municipal Development Guidelines.	**NA**	No new access driveways are proposed.
PO4 An access driveway does not allow water to pond adjacent to any buildings or cause water to enter a building.	**AO4.1** New access driveways have a minimum cross fall of one (1) metre (vertical) to 100 metres (horizontal) away from all adjoining buildings.	**NA**	Refer to response AO3.1 above.
Parking, access and transport			
PO5 Provision is made for on-site vehicle parking: (a) to meet the demand likely to be generated by the development; and	**AO5.1** AO5.1.1 On-site car parking is provided at the rates set out in Table 9.3.1.3.2 of the access, parking and transport code.	**AO**	The proposed extension to the extraction area will not increase the existing gross floor area for the quarry operation. Therefore, the existing number of on-site car parks will be retained.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(b) to avoid on-street parking where that would adversely impact on the safety or capacity of the road network or unduly impact on local amenity. Editor's note—SC6.6 — Car parking contributions planning scheme policy prescribes circumstances under which an applicant can satisfy PO5.	OR AO5.1.2 Where a change of use of existing premises is proposed and involves not more than minor building work, the existing number of on-site car parks is retained or increased.		
PO6 Car parking areas are designed to: (a) be clearly defined, marked and signed; (b) be convenient and accessible; (c) be safe for vehicles, pedestrians and cyclists; and (d) provide spaces which meet the needs of people with disabilities.	**AO6.1** AO6.1.1 The car parking areas are sealed and designed in accordance with Australian Standard AS 2890, as updated from time to time. OR AO6.1.2 Where a change of use of existing premises is proposed and involves not more than minor building work, the existing standard of on-site car parks is maintained or improved.	**PO**	The proposed development is for an extension to the extraction area only, no changes to the approved extraction volumes, material haulage or general operation of the quarry are proposed. As such, no change to the existing car parking area is required.
PO7 Parking access arrangements are appropriate for: (a) the capacity of the parking area; (b) the volume, frequency and type of vehicle usage; and	**AO7.1** Parking access is provided in accordance with Australian Standard AS 2890, as updated from time to time. **OR**	**PO**	The proposed development is for an extension to the extraction area only, no changes to the approved extraction volumes, material haulage or general operation of the quarry are proposed. As such, no change to the existing car parking access is required.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(c) the function and characteristics of the access road and adjoining road network.	**AO7.1.2** Where a change of use of existing premises is proposed and involves not more than minor building work, the existing parking access is maintained or improved.		
PO8 Landscaping is provided to soften the visual impact of car parking areas and to provide shading.	**AO8.1** AO8.1.1 Shade trees with a minimum height of two (2) metres are provided within car parking areas at the following rate: (a) in single sided, angle or parallel bays — one (1) tree per three (3) car parks; and (b) in double sided, angle or parallel bays — one (1) tree per six (6) car parks. Editor's note—SC6.12 — Landscaping design and street trees planning scheme policy provides sources for determining appropriate species and planting standards. OR AO8.1.2 Where a change of use of existing premises is proposed and involves not more than minor building work, the existing standard of landscaping is maintained or improved.	**NA**	Refer to response AO6.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
PO9 Provision is made for the on-site loading, unloading, manoeuvring and access by service vehicles that: (a) is adequate to meet the demands generated by the development; (b) is designed to accommodate service vehicle requirements; (c) is wholly contained within the site; and (d) does not unduly impede vehicular, cyclist and pedestrian safety and convenience within the site.	**AO9.1** AO9.1.1 New development is designed to ensure service vehicles do not perform reversing movements onto public roads. **AND** AO9.1.2 Access and manoeuvring facilities, loading facilities and connections to the transport network are sealed and designed in accordance with Australian Standard AS 2890. **OR**	**PO**	No change to the existing on site loading, unloading, manoeuvring and access areas is proposed.
	AO9.2 Where a change of use of existing premises is proposed and involves not more than minor building work, the existing provision for service vehicles is maintained or improved.		
PO10 Development is located on roads that are appropriate for the nature of traffic (including vehicles, pedestrians and cyclists) generated, having regard to the safety and efficiency of the transport network.	**AO10.1** AO10.1.1 The existing infrastructure fronting the proposed development is upgraded in accordance with SC6.15 — Road infrastructure and hierarchy planning scheme policy and Capricorn Municipal Development Guidelines.	**PO**	It has been determined that the Power Station Road / Stanwell Quarry access can cater for the wheel paths of the haulage vehicle movements, with no widening required along Power Station Road or at each intersection along its haulage route, including the Capricorn Highway / Power Station Road intersection to

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	OR AO10.1.2 Where a change of use of existing premises is proposed and involves not more than minor building work, the existing infrastructure fronting the proposed development is maintained or improved.		accommodate the proposal (refer **Attachment 8 – Traffic Impact Assessment**).
Infrastructure			
PO11 A water supply is provided that is adequate for the current and future needs of the development.	**AO11.1** Where within a water supply planning area, the development is connected to Council's reticulated water supply system in accordance with SC6.21 — Water supply infrastructure planning scheme policy and the Capricorn Municipal Development Guidelines. Editor's note—A network analysis may be required to demonstrate compliance with this acceptable outcome. Editor's note—Where development is located outside of the water supply planning area to refer to the requirements under the Plumbing Code of Australia.	**NA**	The site is not within a water supply planning area.
PO12 Reticulated water supply networks ensure that the	**AO12.1** Where within a water supply planning area, water supply systems and connections are	**NA**	Refer to response AO11.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
installation is sustainable and minimises whole of life cycle costs.	designed and constructed in accordance with SC6.21 — Water supply infrastructure planning scheme policy and the Capricorn Municipal Development Guidelines. Editor's note—A network analysis may be required to demonstrate compliance with this acceptable outcome. **AND**		
	AO12.2 Where within a water supply planning area, staged developments are connected to the water supply network and operational, prior to the commencement of the use or endorsement of the survey plan.	**NA**	Refer to response AO11.1 above.
PO13 Sewerage treatment and disposal is provided that is appropriate for the level of demand generated, protects public health and avoids environmental harm.	**AO13.1** Where within a sewer planning area, the development is connected to Council's reticulated waste water system in accordance with SC6.17 — Sewerage infrastructure planning scheme policy and the Capricorn Municipal Development Guidelines. Editor's note—A network analysis may be required to demonstrate compliance with this acceptable outcome.	**NA**	The site is not located within a sewer planning area.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	Editor's note—Where development is located outside of the sewer planning area to refer to the requirements under the Plumbing Code of Australia.		
PO14 Reticulated sewer networks ensure that the installation of infrastructure assets is sustainable and minimises whole of life cycle costs.	**AO14.1** Where within a sewer planning area, waste water systems and connections are designed and constructed in accordance with SC6.17 — Sewerage infrastructure planning scheme policy and the Capricorn Municipal Development Guidelines. Editor's note—A network analysis may be required to demonstrate compliance with this acceptable outcome. **AND**	**NA**	Refer to response AO13.1 above.
	AO14.2 Where within a sewer planning area, staged developments are connected to the waste water network and operational prior to the commencement of the use or endorsement of the survey plan.	**NA**	Refer to response AO13.1 above.
PO15 Development is located and designed in a manner that does not result in adverse flood affects to the site and on adjoining properties.	**AO15.1** The development does not result in an increase in flood level, flood water velocity or flood duration on upstream, downstream or adjacent properties.	**AO**	The site is not mapped within the identified flood hazard area. The proposed extension to the extraction area will not increase the flood level, flood water velocity or flood duration upstream, downstream or adjacent to the site.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AND		
	AO15.2 Roof and surface water is conveyed to the kerb and channel or an inter-allotment drainage system in accordance with Australian Standard AS/NZ 3500.3.2, and the Queensland Urban Drainage Manual as updated from time to time.	**NA**	The existing buildings and structures on site have no ability to convey waters to kerb and channel. Surface water on site is either diverted around disturbed areas or captured, stored and treated prior to being released.
Waste management			
PO16 Provision is made for waste management that is appropriate to the use, protects the health and safety of people and the environment. Editor's note—Applicants should also be aware that any provision for disposal of any trade waste is to be made in accordance Council's Trade Waste Policy supporting the *Water Act 2000*, *Water Supply (Safety and Reliability) Act 2008* and the *Plumbing and Drainage Act 2002*.	**AO16.1** The development provides a bin container storage area that has a sealed pad and is screened to the height of the bins. **AND**	**PO**	No changes to the existing waste management on site is proposed.
	AO16.2 On sites in an industrial zone that are greater than 2,000 square metres in area, provision is made for refuse collection vehicles to access the collection area and to enter and leave the site in a forward direction without having to make more than a three-point turn.	**NA**	The site is not in the industrial zone.
Erosion and sediment control			
PO17 Development ensures that all reasonable and practical measures are taken to manage the	**AO17.1** AO17.1.1 Erosion and sediment control plan is to be	**AO**	No filling or excavation is proposed.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
impact of erosion, turbidity and sedimentation, both within and external to the development site from construction activities, including vegetation clearing, earthworks, to protect water quality and environmental values.	designed and implemented in accordance with the Capricorn Municipal Development Guidelines. OR AO17.1.2 No filling or excavation is occurring on the site.		

Biodiversity Overlay Code

Overall Outcomes	Response
(a) development which is of a scale or nature that will, or is likely to, result in adverse impacts on matters of state or local (high) environmental significance and their associated ecological processes and biodiversity values, is avoided unless impacts can be minimised by: (i) retaining or regenerating native vegetation; (ii) ensuring changes to natural landforms, hydrology and drainage patterns do not significantly affect ecological values; (iii) locating and designing public access to avoid disturbance of ecological values; (iv) ensuring threatened wildlife is not disrupted.	Clearing of vegetation to support the development will reduce vegetation cover and therefore result in a reduction of habitat and resources for flora and fauna within those communities. Ecological field surveys undertaken by Saunders Havill Group ('SHG') did not identify any unique or significant biodiversity values within the clearing area. As such, the impact to vegetation is considered to be minimal (refer **Attachment 9 – Ecological Assessment Report**). The site will be progressive rehabilitated over the life of the quarry operation which will ensure that the landform is stable, safe and non-polluting. No threatened species were identified on site by SHG during their field surveys.
(b) land mapped as containing local (general) environmental significance is retained to the greatest extent possible;	The proposed development in unable to completely avoid areas mapped as local (general) environmental significance however, the proposed action has been sited to avoid clearing and adverse impacts (e.g. causing habitat fragmentation) within mapped remnant and regrowth vegetation with clearing focused around currently cleared and disturbed areas.
(c) development protects wildlife habitats and wildlife corridors for significant species of flora and fauna and ecological communities so that ecological connectivity and wildlife habitat extent are retained;	The site exists within a large, proposed state biodiversity corridor, with mostly undeveloped land across its 10km-width, in the vicinity of the proposed quarry site. The proposal will remove a small patch of this proposed large-scale biodiversity corridor, allowing wildlife movement opportunities to remain intact north and south of the site, in addition to maintaining east-west connectivity.
(d) development within areas of wetlands, waterways and their buffer areas are protected to enhance water quality, ecological values and the natural hydrological regime and functioning of surface and ground waters;	The proposed development is located outside the defining bank of any waterways. No wetlands are present on or near the site.
(e) development: (i) locates outside of a wetland, or waterway and its buffer; and (ii) avoids adverse impacts on a wetland or waterway, its buffer and associated values;	The proposed extension area is located outside of wetlands, waterways and their buffers on the site.
(f) undeveloped frontal dunes and areas directly adjacent to beaches and waterways are maintained in a natural state and protected for their environmental, biodiversity, scenic and recreational values for current and future generations;	The site does not contain undeveloped frontal dunes and does not directly adjoin any beaches or waterways.

(g) development maintains sustainable community access to waterways, national parks and other land in protected area estates, and maintains a buffer in accordance with minimum best practice distances so as to avoid adverse impacts;	The proposed development will not impact on sustainable community access to waterways, national parks or other land in protected area estates.
(h) management arrangements facilitate the long-term conservation of environmentally significant areas, ecological processes and biodiversity values; and	The proposed extractive industry operation does not have the ability to provide management arrangements to facilitate long-term conservation of environmentally significant areas, ecological processes or biodiversity values.
(i) environmentally significant areas are protected from further fragmentation.	The proposed development includes the removal of currently cleared and disturbed vegetation. The proposed area of disturbance has been sited to avoid clearing which will cause adverse impacts and fragmentation.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Matters of state or local (high) environmental significance Editor's note—Refer to overlay map overlay map OM-3A			
PO1 Development is located, designed and operated to retain and protect significant natural assets, habitat and values to the greatest extent possible. Where this is not possible, impacts are minimised by: (a) retaining native vegetation; (b) allowing for the regeneration of native vegetation to the area, or rehabilitating with locally endemic plants in non-vegetated areas of the site; (c) landscaping with locally native plants; (d) locating and designing public access to avoid disturbance of ecological values;	No acceptable outcome is nominated.	**NA**	The proposed development is not located in an area mapped as high ecological significance.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(e) ensuring alterations to natural landforms, hydrology and drainage patterns do not significantly affect ecological values; and (f) incorporating measures that avoid the disruption of threatened wildlife and their habitat by allowing for their safe movement through the site. Note—In areas where environmental values have been mapped but are no longer present a report certified by an appropriately qualified person that the development site does not contain any matters of environmental significance will be required. Note—An environmental offset is provided for any permanent, irreversible loss or reduction in matters of local (high) environmental significance caused by the development. An environmental offset is carried out as per the requirements of the Queensland Government's Environmental Offsets Policy, as amended from time to time.			
PO2 Development ensures native vegetation is retained, regenerated and rehabilitated in such a way as to:	No acceptable outcome is nominated.	**NA**	Refer to response PO1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) ensure protection of areas of vegetation within biodiversity corridors and wildlife habitats; (b) maintain vegetation that is in patches of greatest size and smallest possible edge-to-area ratio; (c) maximise the linkages between vegetation located on the subject site; (d) maximise linkages between vegetation located on adjacent properties within the biodiversity network; (e) allow the dispersal or movement through biodiversity corridors; and (f) protect riparian vegetation in and adjacent to watercourses.			
Matters of local (general) environmental significance Editor's note—Refer to overlay map overlay map OM-3A			
PO3 Development minimises impacts on biodiversity values by ensuring they are retained to the greatest extent possible. Editor's note—minimising the impacts on biodiversity values can be achieved by: (a) retaining native vegetation; (b) allowing for the regeneration of native vegetation;	No acceptable outcome is nominated.	**PO**	The proposed development in unable to completely avoid areas mapped as environmental significance however, the proposed action has been sited to avoid clearing and adverse impacts (e.g. causing habitat fragmentation) within these mapped areas. Ecological field surveys undertaken by SHG did not identify any unique or significant biodiversity values within the proposed clearing area (refer **Attachment 9 – Ecological**

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(c) landscaping with native local plants; (d) locating and designing public access (for example roads, bushfire separation areas etcetera) to avoid disturbance of ecological values; (e) accommodating the safe movement of wildlife through the site; and (f) limiting alterations to natural landforms and avoiding disturbance to natural waterways and drainage paths.			**Assessment Report**). As such, the impact to vegetation is considered to be minimal. The site will be progressively rehabilitated with locally endemic species to ensure the landform is returned to a state similar to pre-disturbance. A Water Quality Management Plan has been prepared for the Stanwell Quarry to demonstrate that water quality objectives can be met via appropriate water management and treatment devices (refer Section 4.2 of **Attachment 7 – Site Based Management Plan**).
Biodiversity corridors and wildlife habitats Editor's note—Refer to overlay map overlay map OM-3B			
PO4 Development maintains unimpeded movement of terrestrial and aquatic fauna that are associated with or are likely to use the biodiversity corridor as part of their normal life cycle by: (a) ensuring development, including roads, pedestrian access and in-stream structures, do not create barriers to the movement of fauna (including fish passage) along or within biodiversity corridors;	No acceptable outcome is nominated.	**NA**	The site does not contain a mapped biodiversity corridor.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(b) providing effective wildlife movement infrastructure in accordance with best practice and directing fauna to locations where wildlife movement infrastructure has been provided to enable fauna to safely negotiate a development area; and (c) separating fauna from potential hazards through the use of appropriate fencing. Note—In areas where environmental values have been mapped but are no longer present a report certified by an appropriately qualified person that the development site does not contain any matters of environmental significance will be required. Editor's note—Biodiversity corridors have been mapped based on a minimum width of 500 metres.			
PO5 Development: (a) retains and protects areas of wildlife habitat that support a critical life stage ecological process such as feeding, breeding or roosting for identified species; and (b) incorporates measures as part of siting and design to protect and retain identified	**AO5.1** Development retains and protects native fauna feeding areas, nesting, breeding and roosting sites within the identified wildlife habitats. Editor's note—Development applications lodged with Council must identify all species listed that are present within or adjoining premises and habitats that may be affected by the proposal. In particular applications are to identify and		A full fauna survey was completed by SHG from 17th – 23rd November 2020. The fauna assessment was conducted across the site to identify and describe on-ground habitat features (e.g. significant trees and hollows, fallen timber, stags, termite mounds, roosting sites etc.), signs of fauna activity (e.g. scats, tracks, scratch marks on trees, nests etc.) and observations of species present within the area.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
ecological values and underlying ecosystem processes within or adjacent to the development site.	describe how the development protects or enhances wildlife habitat at any critical life stage ecological processes within or adjacent to the development area. This should be reflected in an ecological assessment report prepared in accordance with the SC6.8 — Ecological assessment planning scheme policy.		With the exception of the power easement and quarry footprint, vegetation surrounding the site is well connected to the broader landscape allowing opportunity for fauna movement throughout the area. Stanwell Conservation area is present to the west of the site which likely provides significant habitat value and includes a large dam (refer **Attachment 9 – Ecological Assessment Report**).
Wetlands and waterways Editor's note—Refer to overlay maps OM-3C and OM-3D			
PO6 Development has no adverse impacts on: (a) native vegetation; (b) habitat; (c) ecological functions; (d) water quality; and (e) nature conservation values. Editor's note—Waterway buffers (aside from MSES-Waterways) have been mapped based on the following minimum widths: (a) fifty (50) metres buffer (twenty-five (25) metres either side of the waterway) for stream orders 1 and 2;	No acceptable outcome is nominated.	**NA**	The proposed development is not located within any mapped wetlands or waterways.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(b) 100 metres (fifty (50) metres either side of the waterway) for stream orders 3 and 4; (c) 200 metres for stream order 5 and above, except for the Fitzroy River; and (d) for the Fitzroy River: 350 metres buffer (175 metres either side of the waterway) upstream of the Fitzroy River Barrage, and 450 metres (225 metres either side of the waterway) downstream of the Fitzroy River Barrage. Editor's note—Wetland buffers have a minimum width of: (a) fifty (50) metres buffer (twenty-five (25) metres either side of the waterway) in urban areas; and (b) 200 metres buffer (100 metres either side of the waterway) in non-urban areas. Editor's note—Vegetation clearing undertaken as a consequence of development occurs in compliance with the *Vegetation Management Act 1999* and *Nature Conservation Act 1992*.			
PO7 Development does not cause land degradation near a waterway or wetland, including:	**AO7.1** Excavation and filling is not undertaken in waterways or wetlands.	**NA**	Refer to response PO6 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and (b) loss or modification of chemical, physical or biological properties or functions of soil.			
Hydrology			
PO8 Development: (a) enhances or maintains the existing groundwater hydrological regime of all areas of environmental significance; and (b) ensures that the water table and hydrostatic pressure in the area of environmental significance is returning to its natural state.	No acceptable outcome is nominated.	**NA**	Refer to response PO6 above.
Non-native pest management			
PO9 Development avoids the introduction of non-native pest species (plant or animal) that pose a risk to ecological integrity.	**AO9.1** Development does not introduce non-native pest species.	**AO**	The SBMP for the proposed operation contains a Weed Management Plan (section 4.7) which identifies controls measures and methods for ongoing inspections of weeds and pests (refer **Attachment 7 – Site Based Management Plan**). These controls and methods include: • If weeds are identified, weed control will be undertaken in the surrounding area to

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
			minimise any contamination of material that is to be transported off-site • Routine inspections for restricted matter such as declared plants / listed weeds, feral cat and pig, rabbit, red fox and other potential pests within the quarry area • Develop a control/eradication plan for pests that may potentially occur on the quarry site
Ongoing management, construction and operation			
PO10 During construction and operation of development, ongoing management, monitoring and maintenance is undertaken to ensure impacts on environmentally significant areas, biodiversity values and ecological processes, including water quality and hydrology, are avoided or minimised. Editor's note—Construction and operation related to a development are carried out in accordance with an operational management plan where appropriate. This plan can form an amendment to an existing approved management plan for the site.	No acceptable outcome is nominated.		The proposed operation will be required to comply with conditions of an EA, issued and regulated by the Department of Environment and Science. The EA will contain conditions regulating noise, air quality, water quality, blasting and rehabilitation of the site. The EA will require ongoing monitoring of environmental values on the site.
PO11 Development adjoining a national park or other land in a protected area estate:	No acceptable outcome is nominated.	**NA**	The proposed development does not adjoin a national park or other land in a protected area estate.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) maintains and where appropriate, improves access to a protected area estate; and (b) maintains a buffer to a protected area estate in accordance with minimum best practice standards and includes characteristics to avoid development impacts. Editor's note—Protected area estate includes the following classes, as defined in the *Nature Conservation Act 1992*: (a) national park (scientific); (b) national parks; (c) national parks (Aboriginal land); (d) national parks (Torres Strait Islander); (e) national parks (Cape York Peninsula Aboriginal land); (f) national parks (recovery); (g) conservation parks; (h) resource reserves; (i) nature refuges; (j) coordinated conservation area; (k) wilderness areas; (l) World Heritage management areas; and (m) international agreement areas.			

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
PO12 Management arrangements facilitate the effective conservation and protection of matters of national, state or local environmental significance, ecological processes and biodiversity values.	**AO12.1** Areas supporting matters of national, state or local significance features, biodiversity values or ecological processes are: (a) transferred into public ownership where the land is required for public access or for some other public purpose consistent with its ecological, open space or recreation functions, including: (i) access for maintenance; (ii) linking core and remnant habitat areas; (iii) protecting water quality and ecological processes; and (iv) other public benefit; or (b) incorporated within private open space and included within a voluntary statutory covenant that is registered under the *Land Title Act 1994*. Editor's note—Matters of national, state or local environmental significance include all areas shown on all biodiversity overlay maps.	**NA**	The site is not required for public access or for some other public purpose consistent with its ecological, open space or recreation functions.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Rehabilitation			
PO13 Areas degraded as a result of development are rehabilitated by the proponent as near as is practical to the naturally occurring suite of native plant species and ecological communities. Editor's note—A rehabilitation plan supported by expert ecological advice prepared in accordance with SC6.8 — Ecological assessment planning scheme policy as well as reference to SC6.12 — Landscape design and street trees planning scheme policy will assist in demonstrating achievement of this performance outcome.	No acceptable outcome is nominated.	**PO**	Landscaping and rehabilitation will continue to be incorporated into the day to day operations of the quarry to assist in minimising rehabilitation costs and impacts on the environment whilst ensuring post extraction land use objectives are achieved. A Rehabilitation Management Plan has been prepared for the Stanwell Quarry and is included as section 4.8 of the SBMP (refer **Attachment 7 – Site Based Management Plan**).
Reconfiguring a lot			
PO14 The ecological function and biodiversity values of existing habitat are maintained by ensuring that reconfiguring a lot does not result in the fragmentation of habitat.	**AO14.1** Reconfiguring a lot does not result in any additional lots where the entire site is subject to: (a) matters of state or local (high) environmental significance; or (b) biodiversity corridors and wildlife habitats; or (c) waterways and wetlands. **AND**	**NA**	The proposed development does not involve reconfiguring a lot.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AO14.2 Roads created as the result of reconfiguring a lot are located between the riparian corridor and any additional lots created.		

Bushfire Hazard Overlay

Overall Outcomes	Response
(a) development is compatible with the level of risk associated with the bushfire hazard;	Quarries by their nature are well equipped to assist and/or deal with bushfire events. The use of heavy earthmoving machinery and water trucks used in the quarry operation can be called upon to assist in the event of a bushfire.
(b) development location, siting and design responds to the risk of bushfire hazard and minimises risk to personal safety and property;	
(c) development enables access and evacuation of people and emergency services vehicles, and access to waters suppliers during a bushfire hazard event;	The site will continue to gain access via the haul road on part of Lot 44 on SP140243.
(d) development involving the manufacture or storage of hazardous materials does not increase the risk to public safety or the environment in a bushfire event;	The proposed development does not involve the manufacture or storage of hazardous materials.
(e) natural processes and the protective function of landforms or vegetation are maintained in bushfire hazard areas;	The area for the proposed extension is not a protective landform and the removal of the vegetation in this area will reduce the risk of bushfire
(f) essential community infrastructure and community facilities are located and designed to function effectively during and immediately after bushfire hazard events; and	No essential community infrastructure or community facilities are proposed.
(g) development contributes to effective and efficient disaster management response and recovery capabilities.	The on site water storage devices (quarry sump and sediment basins) can be used as a water supply for firefighting purposes in a bushfire event.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
Access			
PO1 Development ensures that the location, siting, and design of development and associated driveways and access routes:	**AO1.1** AO1.1.1 Where the development is located in an urban area, the development:		

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(a) avoid potential for entrapment during a bushfire; (b) facilitate safe and efficient emergency services to access and egress the site during a bushfire; and (c) enables safe evacuation of the site during a bushfire for site occupants.	(a) has direct access to a constructed, all-weather, public road capable of carrying emergency service vehicles; (b) has a maximum single access driveway length of sixty (60) metres from the street to the development; and (c) access driveways have a maximum gradient of 12.5 per cent. OR		
	AO1.1.2 Where the development is located in a non-urban area, the development: (a) has direct access to a constructed, all-weather, public road capable of carrying emergency service vehicles; (b) is separated from hazardous vegetation by a public road or fire trail with a minimum width of four (4) metres and at least six (6) metres clear of vegetation, with a minimum of 4.8 metres vertical clearance and a maximum gradient of 12.5 per cent; and (c) has: (i) a maximum single access driveway length of sixty (60) metres from the street to the development; or	**AO**	The site has direct access to a constructed public road (Power Station Road).

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	(ii) access driveways that are greater than sixty (60) metres from the street to the dwelling provide a turning circle with a minimum radius of eight (8) metres every sixty (60) metres.		
Water supply for fire fighting purposes			
PO2 Development provides adequate and accessible water supply for fire fighting purposes which is safely located and freely accessible for fire fighting.	**AO2.1** AO2.1.1 In a reticulated water supply area fire hydrants in: (a) residential areas are above ground single outlet fire hydrants and provided at not less than eighty (80) metre intervals and at each street intersection; and Editor's note—To remove any doubt, these intervals also apply to common access ways within a common private title. (b) commercial and industrial areas are above or below ground fire hydrants and provided at not less than ninety (90) metre intervals and at each street intersection. Above ground fire		

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	hydrants are to be fitted with dual valve outlets in these areas. Editor's note—Fire hydrants are designed and installed in accordance with Australian Standard 2419.1 Fire hydrant installations – system design, installation and commissioning, unless specified by the relevant water entity. OR		
	AO2.1.2 Where a reticulated water supply is not available or the development is not within eighty (80) metres of a hydrant, a water tank is provided within ten (10) metres of the building or structure, and the water tank has: (a) a take-off connection from the building to the tank which is at a level that provides on-site water storage of not less than the water requirement outlined in Table 8.2.4.3.3; (b) a hardstand area allowing heavy rigid fire appliance access within six (6) metres of a tank; and (c) fire brigade tank fittings consisting of: (i) for above ground tanks,	**PO**	Quarries by their nature are well equipped to assist and/or deal with bushfire events. The use of heavy earthmoving machinery and water trucks used in the quarry operation can be called upon to assist in the event of a bushfire. The quarry sump and sediment basins can be used as a water supply for firefighting purposes in a bushfire event.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	(A) fifty (50) millimetre ball valve and male camlock coupling; and (B) above ground water pipe fittings that are metal; or (ii) for underground tanks, an access hole of 200 millimetre diameter (minimum) to allow access for suction lines. Note—Plastic tanks are not recommended, however if they are fully submerged with above ground access points they are acceptable. Note—Where water tanks are required, swimming pools, creeks and dams should not be used as a substitute for a dedicated static supply as these sources of water are not reliable during drought conditions.		
Activities involving hazardous materials			
PO3 Public safety and the environment are not adversely affected by the impacts of bushfire on hazardous materials.	**AO3.1** Development does not involve the manufacture or storage of hazardous materials within a bushfire hazard area. Editor's note—Refer to the Work Health and Safety Act 2011 and associated regulation, the Environmental Protection Act 1994 and the	**AO**	The proposed development does not involve the manufacture or storage of hazardous materials.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	relevant building assessment provisions under the Building Act 1975 for requirements related to the manufacture and storage of hazardous substances.		
Development within the high and very high bushfire hazard areas			
Avoiding the hazard			
PO4 The development is compatible with the level of risk associated with the bushfire hazard.	**AO4.1** The development has a Bushfire Attack Level of less than 12.5. Editor's note—The Bushfire Attack Level is calculated in accordance with the methodology described in the Australian Standard AS 3959 — Construction of buildings in bushfire prone areas.	**NA**	No new buildings are proposed.
Land use			
PO5 Essential community infrastructure and community facilities are highly vulnerable development are located, designed and sited to: (a) protect the safety of people during a bushfire; (b) not increase the exposure of people to the risk from a bushfire event; (c) minimise the risk to vulnerable populations; and	**AO5.1** The following uses are not located in high or very high bushfire hazard areas: (a) childcare centre; (b) detention facility; (c) educational establishment; (d) emergency services; (e) hospital; (f) industrial use involving manufacture or storage of hazardous materials;	**AO**	The proposed extractive industry use is not listed in AO5.1.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
(d) ensure essential community infrastructure can function effectively during and immediately after bushfire events.	(g) multiple dwelling; (h) outstation; (i) relocatable home park; (j) residential care facility; (k) retirement facility; (l) rooming accommodation; (m) shopping centre; (n) short-term accommodation; (o) telecommunications facility; (p) tourist park; (q) tourist attraction; (r) transport depot; and (s) utility installation.		
Reconfiguring a lot			
General			
PO6 Where reconfiguration is undertaken a separation distance from hazardous vegetation is provided. Editor's note—The preparation of a bushfire management plan in accordance with SC6.5 — Bushfire management planning scheme policy can assist in demonstrating compliance with this performance outcome.	**AO6.1** In urban areas lots are separated from hazardous vegetation by a distance: (a) that achieves a Bushfire Attack Level of twenty-nine (29) or less at all boundaries; and (b) is contained wholly within the development site. **OR**	**NA**	The proposed development does not involve Reconfiguring a Lot.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	AO6.2 In non-urban areas a building envelope of reasonable dimensions is provided on each lot which achieves a Bushfire Attack Level of twenty-nine (29) or less at all boundaries Editor's note—Where a separation distance is proposed to be achieved by utilising existing cleared developed areas external to the site, certainty must be established (through tenure or other means) that the land will remain cleared of hazardous vegetation. For staged developments, temporary separation distances, perimeter roads or fire trails may be absorbed as part of subsequent stages.		
PO7 In urban areas development includes a constructed perimeter road between the lots and hazardous vegetation with reticulated water supply. The access is available for both fire fighting and maintenance works.	**AO7.1** In urban areas lot boundaries are separated from hazardous vegetation by a public road which: (a) has a two lane sealed carriageway; (b) contains a reticulated water supply; (c) is connected to other public roads at both ends and at intervals of no more than 500 metres; (d) accommodates geometry and turning radii in accordance with Queensland Fire and Emergency Services' Fire	**NA**	Refer to response AO6.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	Hydrant and Vehicle Access Guidelines; (e) has a minimum of 4.8 metres vertical clearance above the road; (f) is designed to ensure hydrants and water access points are not located within parking bay allocations; and (g) incorporates roll-over kerbing.		
PO8 In non-urban areas development includes a perimeter road or an all-weather fire access trail which is available for both fire fighting and maintenance/hazard reduction works.	**AO8.1** In non-urban areas the development includes a perimeter road or an all-weather fire access trail which: (a) separates the development from the hazardous vegetation with a width of at least twenty (20) metres; (b) with a minimum formed width of four (4) metres; (c) a minimum of 4.8 metres vertical clearance above the road; (d) has a turning circle with a minimum radius of eight (8) metres every sixty (60) metres; (e) has adequate drainage and erosion control devices; (f) has a gradient no greater than 12.5 per cent and a cross fall of no greater than ten (10) degrees;	**NA**	Refer to response AO6.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	(g) has access at each end of the perimeter road or the fire trail from a public road; (h) has the access point signed and direction of travel identified; and (i) has a suitable arrangement in place to ensure maintenance in perpetuity.		
PO9 Road widths and construction within the development are adequate for fire emergency vehicles.	No acceptable outcome is nominated.	**NA**	Refer to response AO6.1 above.
Emergency services access			
PO10 Development facilitates the safe and efficient access and egress of emergency services during a bushfire event.	**AO10.1** The development includes a perimeter road or a fire access trail which: (a) separates the development from the hazardous vegetation; (b) is a minimum of ten (10) metres in width, with a minimum formed width of four (4) metres; (c) is a minimum of six (6) metres clear of standing flammable vegetation; (d) has passing bays twenty (20) metres long by three (3) metres extra trail width, or turning facilities every 200 metres;	**NA**	The proposed development does not involve Reconfiguring a Lot.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	(e) has adequate drainage and erosion control devices; (f) has a gradient no greater than 12.5 per cent and a cross fall of no greater than ten (10) degrees; (g) has access at each end of the perimeter road or the fire trail from a public road; (h) has the access point signed and direction of travel identified; and (i) has suitable arrangements in place to ensure maintenance in perpetuity.		
Avoiding the hazard			
PO11 Road widths and construction within the development are adequate for fire emergency vehicles to gain access to a safe working area close to dwellings and near water supplies whether or not on-street parking spaces are occupied.	**AO11.1** Road access minimum clearances of 3.5 metres wide and 4.8 metres high are provided for safe passage of emergency vehicles. Editor's note—For further information on how to address the above criteria please see Queensland Fire and Emergency Service: Fire hydrant and vehicle access guidelines for residential, commercial and industrial lots.	**NA**	Refer to response AO10.1 above.
PO12 Hydrants are suitably identified so that fire services can locate them at all hours.	**AO12.1** Hydrants are identified as specified in Queensland Fire and Emergency Service: Fire hydrant and vehicle access guidelines for residential, commercial and industrial lots.	**NA**	Refer to response AO10.1 above.

Performance outcomes	Acceptable outcomes	Compliance **PO** = Performance Outcome **AO** = Acceptable Outcome **NA** = Not Applicable	Comments
	Editor's note—Fire hydrants are designed and installed in accordance with Australian Standard 2419.1 Fire hydrant installations – system design, installation and commissioning, unless specified by the relevant water entity.		

DA Form 1 – Development application details

Approved form (version 1.3 effective 28 September 2020) made under section 282 of the Planning Act 2016.

This form **must** be used to make a development application **involving code assessment or impact assessment**, except when applying for development involving only building work.

For a development application involving **building work only**, use *DA Form 2 – Building work details*.

For a development application involving **building work associated with any other type of assessable development (i.e. material change of use, operational work or reconfiguring a lot)**, use this form (*DA Form 1*) **and** parts 4 to 6 of *DA Form 2 – Building work details.*

Unless stated otherwise, all parts of this form **must** be completed in full and all required supporting information **must** accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development application relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994*, and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008.* For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

Note: *All terms used in this form have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules).*

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) (*individual or company full name*)	AMCOR Quarries & Concrete Pty Ltd
Contact name *(only applicable for companies)*	Sam Lyons (c/- Groundwork Plus)
Postal address *(P.O. Box or street address)*	PO Box 1779
Suburb	Milton
State	QLD
Postcode	4064
Country	Australia
Contact number	(07) 3871 0411
Email address *(non-mandatory)*	slyons@groundwork.com.au
Mobile number *(non-mandatory)*	
Fax number *(non-mandatory)*	
Applicant's reference number(s) *(if applicable)*	1662.DA1

2) Owner's consent
2.1) Is written consent of the owner required for this development application?
☒ Yes – the written consent of the owner(s) is attached to this development application ☐ No – proceed to 3)

PART 2 – LOCATION DETAILS

3) Location of the premises *(complete 3.1) or 3.2), and 3.3) as applicable)*

***Note**: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see DA Forms Guide: Relevant plans.*

3.1) Street address and lot on plan

☒ Street address **AND** lot on plan (*all lots must be listed*), ***or***

☐ Street address **AND** lot on plan for an adjoining or adjacent property of the premises *(appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon. All lots must be listed).*

a)	Unit No.	Street No.	Street Name and Type	Suburb
		294	Hume Road	Kabra
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
	4702	1	RP616642	Rockhampton Regional Council
b)	Unit No.	Street No.	Street Name and Type	Suburb
			No address available	Kabra
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
	4702	44	SP140243	Rockhampton Regional Council

3.2) Coordinates of premises *(appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)*

***Note**: Place each set of coordinates in a separate row.*

☐ Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) *(if applicable)*
		☐ WGS84 ☐ GDA94 ☐ Other:	

☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) *(if applicable)*
		☐ 54 ☐ 55 ☐ 56	☐ WGS84 ☐ GDA94 ☐ Other:	

3.3) Additional premises

☐ Additional premises are relevant to this development application and the details of these premises have been attached in a schedule to this development application

☒ Not required

4) Identify any of the following that apply to the premises and provide any relevant details

☐ In or adjacent to a water body or watercourse or in or above an aquifer

Name of water body, watercourse or aquifer:

☐ On strategic port land under the *Transport Infrastructure Act 1994*

Lot on plan description of strategic port land:

Name of port authority for the lot:

☐ In a tidal area

Name of local government for the tidal area *(if applicable)*:

Name of port authority for tidal area *(if applicable)*:

☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*

Name of airport:

☐ Listed on the Environmental Management Register (EMR) under the *Environmental Protection Act 1994*	
EMR site identification:	
☐ Listed on the Contaminated Land Register (CLR) under the *Environmental Protection Act 1994*	
CLR site identification:	

5) Are there any existing easements over the premises?

Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see DA Forms Guide.

☒ Yes – All easement locations, types and dimensions are included in plans submitted with this development application

☐ No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? *(tick only one box)*

☒ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☒ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☒ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

Development Permit for Extractive Industry (extension to existing quarry operation)

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide: Relevant plans.*

☒ Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? *(tick only one box)*

☐ Material change of use ☐ Reconfiguring a lot ☒ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☒ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☒ Code assessment ☐ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

Development Permit for Vegetation Clearing

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*

☒ Relevant plans of the proposed development are attached to the development application

6.3) Additional aspects of development

☐ Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application

☒ Not required

Section 2 – Further development details

7) Does the proposed development application involve any of the following?	
Material change of use	☒ Yes – complete division 1 if assessable against a local planning instrument
Reconfiguring a lot	☐ Yes – complete division 2
Operational work	☒ Yes – complete division 3
Building work	☐ Yes – complete *DA Form 2 – Building work details*

Division 1 – Material change of use

***Note**: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.*

8.1) Describe the proposed material change of use			
Provide a general description of the proposed use	Provide the planning scheme definition *(include each definition in a new row)*	Number of dwelling units *(if applicable)*	Gross floor area (m^2) *(if applicable)*
Extension to extraction area of existing quarry operation (Stanwell Quarry)	Extractive Industry	NA	NA

8.2) Does the proposed use involve the use of existing buildings on the premises?
☒ Yes
☐ No

Division 2 – Reconfiguring a lot

***Note**: This division is only required to be completed if any part of the development application involves reconfiguring a lot.*

9.1) What is the total number of existing lots making up the premises?

9.2) What is the nature of the lot reconfiguration? *(tick all applicable boxes)*	
☐ Subdivision *(complete 10))*	☐ Dividing land into parts by agreement *(complete 11))*
☐ Boundary realignment *(complete 12))*	☐ Creating or changing an easement giving access to a lot from a constructed road *(complete 13))*

10) Subdivision				
10.1) For this development, how many lots are being created and what is the intended use of those lots:				
Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				

10.2) Will the subdivision be staged?	
☐ Yes – provide additional details below ☐ No	
How many stages will the works include?	
What stage(s) will this development application apply to?	

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?				
Intended use of parts created	Residential	Commercial	Industrial	Other, please specify:
Number of parts created				

12) Boundary realignment			
12.1) What are the current and proposed areas for each lot comprising the premises?			
Current lot		Proposed lot	
Lot on plan description	Area (m^2)	Lot on plan description	Area (m^2)

12.2) What is the reason for the boundary realignment?

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement? *(attach schedule if there are more than two easements)*				
Existing or proposed?	Width (m)	Length (m)	Purpose of the easement? *(e.g. pedestrian access)*	Identify the land/lot(s) benefitted by the easement

Division 3 – Operational work

***Note**: This division is only required to be completed if any part of the development application involves operational work.*

14.1) What is the nature of the operational work?		
☐ Road work	☐ Stormwater	☐ Water infrastructure
☐ Drainage work	☐ Earthworks	☐ Sewage infrastructure
☐ Landscaping	☐ Signage	☒ Clearing vegetation
☐ Other – please specify:		

14.2) Is the operational work necessary to facilitate the creation of new lots? *(e.g. subdivision)*	
☐ Yes – specify number of new lots:	
☒ No	

14.3) What is the monetary value of the proposed operational work? *(include GST, materials and labour)*
$50,000

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application
Rockhampton Regional Council

16) Has the local government agreed to apply a superseded planning scheme for this development application?
☐ Yes – a copy of the decision notice is attached to this development application
☐ The local government is taken to have agreed to the superseded planning scheme request – relevant documents attached
☒ No

PART 5 – REFERRAL DETAILS

17) Does this development application include any aspects that have any referral requirements?
***Note**: A development application will require referral if prescribed by the* Planning Regulation 2017.

☐ No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the **Chief Executive of the *Planning Act 2016*:**

☒ Clearing native vegetation
☐ Contaminated land *(unexploded ordnance)*
☒ Environmentally relevant activities (ERA) *(only if the ERA has not been devolved to a local government)*
☐ Fisheries – aquaculture
☐ Fisheries – declared fish habitat area
☐ Fisheries – marine plants
☐ Fisheries – waterway barrier works
☐ Hazardous chemical facilities
☐ Heritage places – Queensland heritage place *(on or near a Queensland heritage place)*
☐ Infrastructure-related referrals – designated premises
☒ Infrastructure-related referrals – state transport infrastructure
☐ Infrastructure-related referrals – State transport corridor and future State transport corridor
☐ Infrastructure-related referrals – State-controlled transport tunnels and future state-controlled transport tunnels
☐ Infrastructure-related referrals – near a state-controlled road intersection
☐ Koala habitat in SEQ region – interfering with koala habitat in koala habitat areas outside koala priority areas
☐ Koala habitat in SEQ region – key resource areas
☐ Ports – Brisbane core port land – near a State transport corridor or future State transport corridor
☐ Ports – Brisbane core port land – environmentally relevant activity (ERA)
☐ Ports – Brisbane core port land – tidal works or work in a coastal management district
☐ Ports – Brisbane core port land – hazardous chemical facility
☐ Ports – Brisbane core port land – taking or interfering with water
☐ Ports – Brisbane core port land – referable dams
☐ Ports – Brisbane core port land – fisheries
☐ Ports – Land within Port of Brisbane's port limits *(below high-water mark)*
☐ SEQ development area
☐ SEQ regional landscape and rural production area or SEQ rural living area – tourist activity or sport and recreation activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – community activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – indoor recreation
☐ SEQ regional landscape and rural production area or SEQ rural living area – urban activity
☐ SEQ regional landscape and rural production area or SEQ rural living area – combined use
☐ Tidal works or works in a coastal management district
☐ Reconfiguring a lot in a coastal management district or for a canal
☐ Erosion prone area in a coastal management district
☐ Urban design
☐ Water-related development – taking or interfering with water
☐ Water-related development – removing quarry material *(from a watercourse or lake)*
☐ Water-related development – referable dams
☐ Water-related development –levees *(category 3 levees only)*
☐ Wetland protection area

Matters requiring referral to the **local government:**

☐ Airport land
☐ Environmentally relevant activities (ERA) (*only if the ERA has been devolved to local government)*

☐ Heritage places – Local heritage places

Matters requiring referral to the **Chief Executive of the distribution entity or transmission entity:**
☐ Infrastructure-related referrals – Electricity infrastructure

Matters requiring referral to:
- The **Chief Executive of the holder of the licence**, if not an individual
- The **holder of the licence**, if the holder of the licence is an individual

☐ Infrastructure-related referrals – Oil and gas infrastructure

Matters requiring referral to the **Brisbane City Council:**
☐ Ports – Brisbane core port land

Matters requiring referral to the **Minister responsible for administering the *Transport Infrastructure Act 1994*:**
☐ Ports – Brisbane core port land *(where inconsistent with the Brisbane port LUP for transport reasons)*
☐ Ports – Strategic port land

Matters requiring referral to the **relevant port operator**, if applicant is not port operator**:**
☐ Ports – Land within Port of Brisbane's port limits *(below high-water mark)*

Matters requiring referral to the **Chief Executive of the relevant port authority:**
☐ Ports – Land within limits of another port *(below high-water mark)*

Matters requiring referral to the **Gold Coast Waterways Authority:**
☐ Tidal works or work in a coastal management district *(in Gold Coast waters)*

Matters requiring referral to the **Queensland Fire and Emergency Service:**
☐ Tidal works or work in a coastal management district *(involving a marina (more than six vessel berths))*

18) Has any referral agency provided a referral response for this development application?

☐ Yes – referral response(s) received and listed below are attached to this development application
☒ No

Referral requirement	Referral agency	Date of referral response

Identify and describe any changes made to the proposed development application that was the subject of the referral response and this development application, or include details in a schedule to this development application *(if applicable).*

PART 6 – INFORMATION REQUEST

19) Information request under Part 3 of the DA Rules

☒ I agree to receive an information request if determined necessary for this development application
☐ I do not agree to accept an information request for this development application

***Note**: By not agreeing to accept an information request I, the applicant, acknowledge:*

- *that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties*
- *Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.*

Further advice about information requests is contained in the DA Forms Guide.

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? *(e.g. a preliminary approval)*

☒ Yes – provide details below or include details in a schedule to this development application
☐ No

List of approval/development application references	Reference number	Date	Assessment manager
☒ Approval ☐ Development application	AF/31/03.230	10 September 2002	Fitzroy Shire Council
☐ Approval ☐ Development application			

21) Has the portable long service leave levy been paid? *(only applicable to development applications involving building work or operational work)*

☐ Yes – a copy of the receipted QLeave form is attached to this development application
☐ No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the assessment manager decides the development application. I acknowledge that the assessment manager may give a development approval only if I provide evidence that the portable long service leave levy has been paid
☒ Not applicable *(e.g. building and construction work is less than $150,000 excluding GST)*

Amount paid	Date paid (dd/mm/yy)	QLeave levy number (A, B or E)
$		

22) Is this development application in response to a show cause notice or required as a result of an enforcement notice?

☐ Yes – show cause or enforcement notice is attached
☒ No

23) Further legislative requirements

Environmentally relevant activities

23.1) Is this development application also taken to be an application for an environmental authority for an **Environmentally Relevant Activity (ERA)** under section 115 of the *Environmental Protection Act 1994*?

☒ Yes – the required attachment (form ESR/2015/1791) for an application for an environmental authority accompanies this development application, and details are provided in the table below
☐ No

***Note**: Application for an environmental authority can be found by searching "ESR/2015/1791" as a search term at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.*

Proposed ERA number:	16	Proposed ERA threshold:	2b & 3b
Proposed ERA name:	Extracting & Screening		

☐ Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a **hazardous chemical facility**?

☐ Yes – *Form 69: Notification of a facility exceeding 10% of schedule 15 threshold* is attached to this development application
☒ No

***Note**: See www.business.qld.gov.au for further information about hazardous chemical notifications.*

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation that the chief executive of the *Vegetation Management Act 1999* is satisfied the clearing is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*?

☒ Yes – this development application includes written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)

☐ No

***Note**: 1. Where a development application for operational work or material change of use requires a s22A determination and this is not included, the development application is prohibited development.*

2. See https://www.qld.gov.au/environment/land/vegetation/applying for further information on how to obtain a s22A determination.

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on a **prescribed environmental matter** under the *Environmental Offsets Act 2014*?

☐ Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter

☒ No

***Note**: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.*

Koala habitat in SEQ Region

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work which is assessable development under Schedule 10, Part 10 of the Planning Regulation 2017?

☐ Yes – the development application involves premises in the koala habitat area in the koala priority area

☐ Yes – the development application involves premises in the koala habitat area outside the koala priority area

☒ No

***Note**: If a koala habitat area determination has been obtained for this premises and is current over the land, it should be provided as part of this development application. See koala habitat area guidance materials at www.des.qld.gov.au for further information.*

Water resources

23.6) Does this development application involve **taking or interfering with underground water through an artesian or subartesian bore, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water under the *Water Act 2000***?

☐ Yes – the relevant template is completed and attached to this development application and I acknowledge that a relevant authorisation or licence under the *Water Act 2000* may be required prior to commencing development

☒ No

***Note**: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au for further information.*

DA templates are available from https://planning.dsdmip.qld.gov.au/. If the development application involves:

- *Taking or interfering with underground water through an artesian or subartesian bore: complete DA Form 1 Template 1*
- *Taking or interfering with water in a watercourse, lake or spring: complete DA Form1 Template 2*
- *Taking overland flow water: complete DA Form 1 Template 3.*

Waterway barrier works

23.7) Does this application involve **waterway barrier works?**

☐ Yes – the relevant template is completed and attached to this development application

☒ No

DA templates are available from https://planning.dsdmip.qld.gov.au/. For a development application involving waterway barrier works, complete DA Form 1 Template 4.

Marine activities

23.8) Does this development application involve **aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants?**

☐ Yes – an associated *resource* allocation authority is attached to this development application, if required under the *Fisheries Act 1994*

☒ No

***Note**: See guidance materials at www.daf.qld.gov.au for further information.*

Quarry materials from a watercourse or lake

23.9) Does this development application involve the **removal of quarry materials from a watercourse or lake** under the *Water Act 2000?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development
☒ No

***Note**: Contact the Department of Natural Resources, Mines and Energy at www.dnrme.qld.gov.au and www.business.qld.gov.au for further information.*

Quarry materials from land under tidal waters

23.10) Does this development application involve the **removal of quarry materials from land under tidal water** under the *Coastal Protection and Management Act 1995?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development
☒ No

***Note**: Contact the Department of Environment and Science at www.des.qld.gov.au for further information.*

Referable dams

23.11) Does this development application involve a **referable dam** required to be failure impact assessed under section 343 of the *Water Supply (Safety and Reliability) Act 2008* (the Water Supply Act)?

☐ Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the Water Supply Act is attached to this development application
☒ No

***Note**: See guidance materials at www.dnrme.qld.gov.au for further information.*

Tidal work or development within a coastal management district

23.12) Does this development application involve **tidal work or development in a coastal management district**?

☐ Yes – the following is included with this development application:
- ☐ Evidence the proposal meets the code for assessable development that is prescribed tidal work *(only required if application involves prescribed tidal work)*
- ☐ A certificate of title

☒ No

***Note**: See guidance materials at www.des.qld.gov.au for further information.*

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the **Queensland heritage register** or on a place entered in a local government's **Local Heritage Register**?

☐ Yes – details of the heritage place are provided in the table below
☒ No

***Note**: See guidance materials at www.des.qld.gov.au for information requirements regarding development of Queensland heritage places.*

Name of the heritage place:		Place ID:	

Brothels

23.14) Does this development application involve a **material change of use for a brothel**?

☐ Yes – this development application demonstrates how the proposal meets the code for a development application for a brothel under Schedule 3 of the *Prostitution Regulation 2014*
☒ No

Decision under section 62 of the *Transport Infrastructure Act 1994*

23.15) Does this development application involve new or changed access to a state-controlled road?

☐ Yes – this application will be taken to be an application for a decision under section 62 of the *Transport Infrastructure Act 1994* (subject to the conditions in section 75 of the *Transport Infrastructure Act 1994* being satisfied)
☒ No

Walkable neighbourhoods assessment benchmarks under Schedule 12A of the Planning Regulation

23.16) Does this development application involve reconfiguring a lot into 2 or more lots in certain residential zones (except rural residential zones), where at least one road is created or extended?

☐ Yes – Schedule 12A is applicable to the development application and the assessment benchmarks contained in schedule 12A have been considered

☒ No

***Note**: See guidance materials at www.planning.dsdmip.qld.gov.au for further information.*

PART 8 – CHECKLIST AND APPLICANT DECLARATION

24) Development application checklist	
I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17 ***Note**: See the Planning Regulation 2017 for referral requirements*	☒ Yes
If building work is associated with the proposed development, Parts 4 to 6 of *DA Form 2 – Building work details* have been completed and attached to this development application	☐ Yes ☒ Not applicable
Supporting information addressing any applicable assessment benchmarks is with the development application ***Note**: This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning Report Template.*	☒ Yes
Relevant plans of the development are attached to this development application ***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*	☒ Yes
The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued (*see 21*)	☐ Yes ☒ Not applicable

25) Applicant declaration

☒ By making this development application, I declare that all information in this development application is true and correct

☒ Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the assessment manager and any referral agency for the development application where written information is required or permitted pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001*

***Note**: It is unlawful to intentionally provide false or misleading information.*

Privacy – Personal information collected in this form will be used by the assessment manager and/or chosen assessment manager, any relevant referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the development application. All information relating to this development application may be available for inspection and purchase, and/or published on the assessment manager's and/or referral agency's website.

Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, Planning Regulation 2017 and the DA Rules except where:

- such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the Planning Regulation 2017, and the access rules made under the *Planning Act 2016* and Planning Regulation 2017; or
- required by other legislation (including the *Right to Information Act 2009*); or
- otherwise required by law.

This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002.*

PART 9 – FOR COMPLETION OF THE ASSESSMENT MANAGER – FOR OFFICE USE ONLY

Date received: | Reference number(s):

Notification of engagement of alternative assessment manager	
Prescribed assessment manager	
Name of chosen assessment manager	
Date chosen assessment manager engaged	
Contact number of chosen assessment manager	
Relevant licence number(s) of chosen assessment manager	

QLeave notification and payment *Note: For completion by assessment manager if applicable*			
Description of the work			
QLeave project number			
Amount paid ($)		Date paid (dd/mm/yy)	
Date receipted form sighted by assessment manager			
Name of officer who sighted the form			

Application form

Environmental Protection Act 1994

Development application Form 1 - Application details—attachment for an application for an environmental authority

This form is to be attached to the Development application Form 1 - Application details *when making a development application for prescribed environmentally relevant activities (ERAs). Under section 115 of the* Environmental Protection Act 1994 *(EP Act) the development approval (DA) application is taken to be an application for an environmental authority (EA) for the prescribed ERAs.*

It is recommended that prior to making an application for an environmentally relevant activity (ERA), you read the information on what to provide with an application. This information is located on the Business Queensland website at www.business.qld.gov.au (use the search term "Environmental licence"). This website also has a diagnostic tool called the "forms and fees finder" which will help identify any fees and supporting information you need to make an application.

Important notes:

- ☑ The application can't be to dredge or extract more than 10,000 tonnes of material a year in the North Stradbroke Island region. This is prohibited development under the Planning Regulation 2017.
- ☑ All applicants must be registered as suitable operators[1]. A suitable operator is a person or a corporation assessed under section 318I of the EP Act as being suitable to carry out an ERA and is listed on the suitable operator register[2].
- ☑ If more than one ERA is being applied for, the ERAs must be carried out as part of a single integrated operation. ERAs are carried out as a single integrated operation if::
  - the ERAs will be carried out under the day to day management of a single responsible individual (e.g. a site manager or operations manager); and
  - all of the ERAs are operationally interrelated, that is, the operation cannot function without all of the ERAs. Separate applications will need to be made for the ERAs that cannot be carried out as a single integrated operation; and
  - the ERA/s are, or will be, carried out at one or more places; and
  - the places where the ERAs will be carried out are close enough to make the integrated day to day management of the activities feasible.
- ☑ All the ERAs that will be on the EA must be prescribed ERAs. Prescribed ERAs are ERAs listed in schedule 2 of the Environmental Protection Regulation 2019.

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[1] Your EA application must be refused if you are not a registered suitable operator when the application is decided. To become a registered suitable operator, apply through Online Services or request the form "Application to be a registered suitable operator - ESR/2015/1771" by emailing palm@des.qld.gov.au or phoning 1300 130 372 (option 4).

[2] The register is available on the Queensland Government website at www.qld.gov.au, using the search term "suitable operator register".

Queensland Government

Privacy statement

Where ERAs are administered by the Queensland Government:

The Department of Environment and Science and Department of Agriculture and Fisheries are collecting the information on this form to process your application for an EA. The collection is authorised under Chapter 5 of the EP Act.

Please note that the administering authority is required to keep this application on a register of documents open for inspection by members of the public under section 540 of the EP Act, and must permit a person to take extracts from the register pursuant to section 542 of the EP Act. Your personal information will not be otherwise disclosed to any other parties unless authorised or required by law. For queries about privacy matters please email privacy@des.qld.gov.au or telephone: 13 74 68.

Where ERAs are administered by a local government:

Contact the local government for their privacy information.

Pre-lodgement meeting

Where ERAs are administered by the Queensland Government:

You can arrange a pre-lodgement meeting through the Department of State Development, Infrastructure, Local Government and Planning prior to lodging this application if you have not already done so. For more information contact the Department of State Development, Infrastructure, Local Government and Planning (for contact details go to https://planning.dsdmip.qld.gov.au/planning/resources/regional-contacts).

Where ERAs are administered by a local government:

Contact the local government about pre-lodgement meetings.

The fields marked with an asterisk * are mandatory, if they are not completed then your application may be considered not properly made under the *Planning Act 2016*.

1. Applicant details

To nominate a site or application contact for this application please provide details at Questions 14 and 15.

Is there more than one applicant? *	☒ No—provide applicant's details below. ☐ Yes—provide the principal applicant's details below and all other applicants' details in Attachment 1—*"Joint applicants and appointment of principal applicant"*

Name - individual or contact person if applicant is a organisation*	Suitable Operator Reference Number*
Corey Howell	RSO001183
Organisation name, including any trading name (*if an organisation)	ABN/ACN (*if an organisation)
AMCOR Quarries & Concrete Pty Ltd	617 558 004
Residential or registered business address (not a post office box)*	Phone*
Enterprise Drive, Gracemere, QLD 4702	4995 7010
Postal address (if same as above, write "AS ABOVE")*	Facsimile
AS ABOVE	
Email*	☒ Indicate if you want to receive correspondence via email
corey.howell@amcorqc.com.au	

1.1 Nomination of an agent for this application

I/we nominate the below agent to act on my/our behalf and to receive correspondence relating to this application.

Do you want to nominate an agent for this application?* ☐ No → Go to *Question* ***Error! Reference source not found.*** ☒ Yes → Complete the agent's details here.	
Name of agent – individual or contact person if agent is an organisation	
Sam Lyons	
Organisation name, including trading name if an organisation	ABN/ACN (if an organisation)
Groundwork Plus	13 609 422 791
Postal address	Phone
6 Mayneview Street, Milton, QLD 4064	3871 0411
Email	☐ Indicate if you do not want to receive correspondence via email
slyons@groundwork.com.au	

2. Details of the ERA(s) that you want to operate

Please list all of the ERAs that will be undertaken on site, including:

- Any existing ERAs will continue to operate unchanged on the site (select "Existing" in the table below);
- ERAs that are proposed to be undertaken on the site as part of the application (select "New - DA" in the table below); and
- ERAs that are proposed to be undertaken on this site, that don't form part of this application as they do not require a DA (select "New - EA" in the table below).

Listing all the ERAs that will be undertaken on site will help enable them to all be included on the one EA

If the ERA has eligibility criteria and standard conditions[3], identify whether you can comply with them. Select "N/A" where there are no eligibility criteria and standard conditions for that ERA. If you cannot comply with all of the applicable standard conditions, select "no" and attach details of the standard conditions you cannot comply with.

ERA number*	Threshold*	Name of ERA*	New or existing ERA(s)	I can comply with the eligibility criteria*	I can comply with all the standard conditions*
16	2B	Extractive Activities	☐ New - DA ☐ New - EA ☒ Existing	☐ Yes ☒ N/A	☐ Yes ☒ No
16	3B	Screening Activities	☐ New - DA ☐ New - EA ☒ Existing	☐ Yes ☒ N/A	☐ Yes ☒ No
			☐ New - DA ☐ New - EA ☐ Existing	☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ New - DA ☐ New - EA ☐ Existing	☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ New - DA ☐ New - EA ☐ Existing	☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ New - DA ☐ New - EA ☐ Existing	☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ New - DA ☐ New - EA ☐ Existing	☐ Yes ☐ N/A	☐ Yes ☐ No
			☐ New - DA ☐ New - EA ☐ Existing	☐ Yes ☐ N/A	☐ Yes ☐ No

☒ The EA number for existing ERA(s) listed above is EPPR00424513

If there are new ERAs and your existing EA is an amalgamated EA, the application for ERAs associated with the DA application will create a new EA for the new ERAs. An application to amalgamate the current and new EAs may then be required.

☐ I have attached details of the standard conditions that I cannot comply with.

3. Will the ERAs be carried out as a single integrated operation?

Will more than one ERA be operated at the location?*	
☐ No	Go to *Question 4.*

[3] ERAs with eligibility criteria and standard conditions are listed at: www.business.qld.gov.au (use the search term "eligibility criteria").

☒ Yes	Will any of the ERAs be operated as a single integrated operation (see definition on page one)?*	
	☐ No	Go to *Question 4.*
	☒ Yes	Provide details of the ERAs that are operated as a single integrated operation and supporting information showing they are a single integrated operation then go to *Question 4.* ERA 16(2b) and (3b) will be carried out by AMCOR Quarries & Concrete Pty Ltd as part of the Stanwell Quarry. Refer to Environmental Assessment Report for further details (reference: 1662_620_001)

4. Description of land where the ERA/s will be carried out

Where activities will be undertaken at more than one location, provide details in Attachment 2.

Number*	Street Name*	Suburb/Town*	Postcode*
294	Hume Road	Kabra	4702
Real Property Description*		Specific area within the location ie GPS or other descriptor*	
Lot 1 Plan RP616642			
Port (*if applicable)		Project Name (*if applicable)	
		Stanwell Quarry	

5. Details of contaminated land

Is there a site management plan in effect for contaminated land that relates to the land that is the subject of this application?*		
☒ No	Go to *Question 6*.	
☐ Yes	Description of land*	
	Lot and plan number(s)	Local Government Area*
	Lot Plan Lot Plan Lot Plan Lot Plan	

6. Environmental offsets

An environmental offset, under the *Environmental Offsets Act 2014*, may be required for an ERA where, despite all reasonable measures to avoid and minimise impacts on certain environmental matters, there is still likely to be significant residual impact on one or more of those matters.

You must verify the presence, whether temporary or permanent, of those environmental matters. For more information refer to the Queensland Environmental Offsets Policy and the Significant Residual Impact Guideline at the Queensland Government website at www.qld.gov.au, using the search term “environmental offsets”.

Will the ERA(s) being applied for result in a significant residual impact to a matter of State environmental significance (MSES)?*	
☒ No	Go to *Question 7*.
☐ Yes	You **must** attach supporting information that: 1. Details the magnitude and duration of the likely significant residual impact on each prescribed environmental matter (other than matters of local environmental significance) for the entire activity; and

	2. Demonstrates that all reasonable measures to avoid and minimise impacts on each of those matters will be undertaken.

6.1 Notice of election

Has a notice of election been submitted to the administering authority, or is being submitted as part of this application?	
☐ No	Go to *Question 6.2*.
☐ Yes	☐ You can attach the notice of election, if it has not been submitted to the department. Go to *Question 6.3*.

6.2 Staged environmental offsets

Offset delivery can be staged, however for this to occur, the condition of any approved environmental authority needs to state that both the activity and the offset may be staged. As part of your notice of election for each stage under the *Environmental Offsets Act 2014*, you are required to provide a detailed assessment of the quantum of impact of that stage and the offset obligation requirement to be delivered for that stage.

Will the proposed ERA(s) and delivery of an environmental offset be undertaken in stages?	
☐ No	Go to *Question 6.3*
☐ Yes	You **must** attach supporting information that details of how the activity/activities are proposed to be staged.

6.3 Nature conservation environmental offset

Has another authority issued under the *Nature Conservation Act 1992* required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, MSES?	
☐ No	Go to *Question 6.4*
☐ Yes	Provide permit number:

6.4 Marine parks environmental offset

Has marine park permit issued under the *Marine Parks Act 2004* required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, MSES?	
☐ No	Go to *Question 7*
☐ Yes	☐ You **must** attach a copy of the marine park permit to this application.

7. Matters of national environmental significance

There are currently nine matters of national environmental significance (MNES) which have been defined in the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (EPBC Act). These are:

- world heritage properties
- national heritage places
- wetlands of international importance (listed under the Ramsar Convention)
- listed threatened species and ecological communities
- migratory species protected under international agreements
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)
- a water resource, in relation to coal seam gas development and large coal mining development

To determine whether the proposed ERA(s) will have a significant impact on MNES and for referral requirements, please refer to the guidance provided by the Federal Government's Department of Environment on **www.environment.gov.au**.

Would the carrying out of the proposed ERA(s) be likely to have a significant impact on a MNES?*	
☒ No	Go to *Question 9*.
☐ Yes	Has the proposal been referred to the Federal Department of Environment for formal assessment and approval? ☐ No → Go to *Question 8.* ☐ Yes → Go to *Question 7.1*.

7.1 EPBC Act approval for environmental offsets

Has an approval issued under the EPBC Act required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, MSES?	
☐ No	Go to *Question 8*.
☐ Yes	I have attached a copy of the approval under the EPBC Act.
	Are there any MNES which were assessed under the EPBC Act which are the same, or substantially the same as an MSES, but that were not conditioned in the approval? ☐ No → Go to Question *8* ☐ Yes → List these MNES:

8. Environmental impact statement under the *State Development and Public Works Organisation Act 1971*

Certain stages of the EA application process may not apply if the proposed activities were assessed as part of a coordinated project declared under the *State Development and Public Works Organisation Act 1971* (State Development Act), you are only required to answer Questions 8 to 8.1 if you have a current Co-ordinator General's (CG's) evaluation report for the project.

Has an environmental impact statement (EIS) process under State Development Act been completed?*		
☐ No	Go to *Question 9*.	
☐ Yes	What is the title and project name of the completed EIS?*	
	☐ The EIS was **completed for all activities** that are the subject of this application. ☐ The environmental risks or the way the activity/activities are proposed to be carried out **have not changed** since the EIS was completed. ☐ The environmental risks or the way the activity/activities are proposed to be carried out **have changed** since the EIS was completed.	
	☐ The EIS was **not completed for all activities** that are the subject of this application. ☐ The environmental risks or the way the activity/activities are proposed to be carried out **have not changed** since the EIS was completed. ☐ The environmental risks or the way the activity/activities are proposed to be carried out **have changed** since the EIS was completed.	
	Was the EIS completed for all activities that are the subject of this application?*	
	☐ No	Please list the activities that were not included in the EIS or attach documentation with this information to this application: ☐ I have attached the required supporting information.

	☐ Yes	

8.1 Coordinator-General's conditions

Are there CG's conditions that relate to the ERA(s) being applied for?*	
☐ No →	Go to *Question 9*.
☐ Yes →	Name of the CG's evaluation report:

9. Assessment of the environmental impact

This question is **not applicable if** an EIS process under the State Development Act has been completed for all the ERA(s) that are the subject of this application and the environmental risks of the activities **and** the way they are proposed to be carried out has not changed since the EIS was completed.

You must attach to this application an assessment of the likely impact of each new ERA (whether from the DA application or another new ERA you want included on the EA that does not require a DA) on environmental values (*if applicable), including:

- a description of the environmental values likely to be affected by each relevant activity
- details of any emissions or releases likely to be generated by each relevant activity
- a description of the risk and likely magnitude of impacts on the environmental values
- details of the management practices proposed to be implemented to prevent or minimise adverse impacts
- details of how the land the subject of the application will be rehabilitated after each relevant activity ceases

☒ I have attached an assessment of the environmental impact and specific supporting information.

10. Details of waste management

Describe the proposed measures for minimising and managing waste generated by the activity/ies below *
Refer to Table 14 of Attachment 13 - Environmental Assessment Report (reference: 1662_620_001)

☒ I have attached the proposed measures.

11. Take effect date (when fees will commence being charged)

You may nominate when the EA will take effect should it be approved. The date the environmental authority takes effect will be the date from which you can commence the activities as well as the date your annual fees will commence to be charged (your anniversary date). Under section 200 of the EP Act, if a development permit for a material change of use under the *Planning Act 2016* or a State development area (SDA) approval is required in order to carry out the ERA, the EA cannot take effect until the development permit or SDA approval takes effect (known as taking effect pending development approval).

Note that where you are applying new ERAs, and your existing EA is an amalgamated EA, the application for ERAs associated with the DA application will create a new EA for the new ERAs. In this case you may wish to nominate a take effect date in the future which, post approval of this application, will provide you with enough time to amalgamate your current and new EAs. Amalgamating your EAs prior to the take effect date of your new EA will prevent you being required to pay the first annual fee for your new EA.

Do you want the EA to take effect on the decision date, nominated date, or pending development approval?*	
☐ Decision date	The take effect date will be the date of the decision.
☒ Nominated date	Details of nominated take effect date: upon commencement of the new use under the development approval

12. Nomination of site contact

An alternative contact nominated by the legal person which holds, or will in future hold, a relevant authority issued by the department. The department may direct correspondence relating to actual or potential compliance matters to the site contact.

Do you want to nominate a site contact?*			☐ No ☒ Yes, provide details below
Title* Mr	First Name* Corey	Surname* Howell	
Email Address* corey.howell@amcor.com.au			☒ Indicate if you want to receive correspondence via email
Phone			

13. Nomination of application contact

An alternative contact nominated by the legal person which has submitted, or will in future submit, applications to be assessed by the department. All departmental correspondence relating to the assessment of applications will be directed to the application contact, however, if the application results in the issuing of a relevant authority, the relevant authority will be sent to the applicant.

Name or Position*
Sam Lyons
Primary Phone*
(07) 3871 0411
Secondary Phone
Email Address*
slyons@groundwork.com.au

14. Applicant declaration

I declare that the information I have provided is true and correct. I understand that it is an offence under the *Environmental Protection Act 1994* to give information that I know is false, misleading or incomplete.

I will comply with all conditions on my environmental authority as well as any relevant provisions in the *Environmental Protection Act 1994.*

I understand that I am responsible for managing the environmental impacts of these activities, and that approval of this application is not an endorsement by the administering authority of the effectiveness of the management practices proposed or implemented.

Applicant's full name* Corey Howell	Applicant's position* Manager
Applicant's signature* 	Date* 29/11/2021.

Submit attachment, together with any additional information, with all relevant Development application Forms to the assessment manager for the development application.

Attachment 1

Joint applicants and appointment of principal applicant

We are joint applicants for this environmental authority application and hereby appoint _____ as the principal applicant to receive statutory documents relating to this application.

Name - individual or contact person if applicant is an organisation*	Suitable Operator Reference Number*
Organisation name, including trading name (*if an organisation)	ABN/ACN (*if an organisation)
Residential or registered business address (not a post office box)*	Phone*
Postal address (if same as above, state "AS ABOVE") *	Facsimile
Email*	☐ Indicate if you want to receive correspondence via email
Signature*	Date*

Name - individual or contact person if applicant is an organisation*	Suitable Operator Reference Number*
Organisation name including trading name (*if an organisation)	ABN/ACN (*if an organisation)
Residential or registered business address (not a post office box)*	Phone*
Postal address (if same as above, state "AS ABOVE")*	Facsimile
Email*	☐ Indicate if you want to receive correspondence via email
Signature*	Date*

Name - individual or contact person if applicant is an organisation*	Suitable Operator Reference Number*
Business name including trading name (*if an organisation)	ABN/ACN (*if an organisation)
Residential or registered business address (not a post office box)*	Phone*
Postal address (if same as above, state "AS ABOVE")*	Facsimile
Email*	☐ Indicate if you want to receive correspondence via email
Signature*	Date*

Attachment 2

List of locations where the ERA(s) will be carried out.

Where there is more than one location list all locations and which ERA(s) will be conducted at each location.

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
397	Power Station Road	Stanwell	4702	16(2b) 16(3b)
Real Property Description* Lot 44 Plan SP140243		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description* Lot Plan		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description* Lot Plan		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description* Lot Plan		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description* Lot Plan		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description* Lot Plan		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		

Number*	Street Name*	Suburb/Town*	Postcode*	ERA/s*
Real Property Description* Lot Plan		Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging)		

17 November 2021

Amcor Quarries & Concrete Pty Ltd
Enterprise Drive, Gracemere QLD 4702
corey.howell@amcorqc.com.au

c/ Groundwork Plus
PO Box 1779, Milton QLD 4064
slyons@groundwork.com.au

RE: Company Owner's Consent to lodge a Development Application

Stanwell Corporation Limited (Stanwell), being the Owner of land described as:

- Lot 44 on SP140243

hereby consents to a development application being made by Groundwork Plus on behalf of their client, Amcor Quarries and Concrete Pty Ltd, that includes the above mentioned land.

Please note that this consent does not constitute nor imply approval of the subject Development Application which is subject to the normal development assessment requirements as set out under the Planning Act 2016.

Please note that this consent is valid for 12 months from the date of this letter and that this consent will automatically lapse if the Development Application has not been lodged within that time.

Yours faithfully

Tony Ruddle
Manager Land & Property
Authorised Officer

phone +61 7 3228 4333 fax +61 7 3228 4524
GPO Box 800 Brisbane QLD 4001 ABN 37 078 848 674 stanwell.com

Individual owner's consent for making a development application under the *Planning Act 2016*

I,

Evan Russell Acton

&

Kim Ellen Acton

as owner of the premises identified as follows:

294 Hume Road, Kabra QLD 4702, properly described as Lot 1 on RP616642

consent to the making of a development application under the *Planning Act 2016* by:

AMCOR Quarries & Concrete Pty Ltd (c/- Groundwork Plus)

on the premises described above for:

A Material Change of Use – Development Permit for Extractive Industry and Operational Work – Development Permit for Vegetation Clearing

E R Acton signature of owner	K. E. Acton signature of owner
10/3/2021 date signed	10. 3. 2021 date signed

Rockhampton Office
232 Bolsover St, Rockhampton
Gracemere Office
1 Ranger St, Gracemere
Mount Morgan Office
32 Hall St, Mount Morgan

13 December 2021

Our Reference: D/163-2021
Enquiries: Brendan Standen
Telephone: 07 4936 8099

Amcor Quarries & Concrete Pty Ltd
Sam Lyons C/- Groundwork Plus
PO Box 1779
MILTON QLD 4064

Dear Sir/Madam

ACTION NOTICE – NOT PROPERLY MADE APPLICATION
(Given under section 3.1 of the Development Assessment Rules)

Council refers to your Development Application received by Council on 30 November 2021.

Location Details

Street address:	294 Hume Road, Kabra and 397 Power Station Road, Stanwell
Real property description:	Lot 1 on RP616642 and Lot 44 on SP140243

Application Details

Application number:	D/163-2021
Application description:	Material Change of Use for Extractive Industry and Operational Work for Clearing Vegetation

Council does not consider the application to be a properly made application in accordance with section 51(5) of the *Planning Act 2016* for the following reasons:

1) The requisite fee of $20,000.00 has not been paid.

The action/s listed must be completed and a notice given to Council advising that the action notice has been complied with, within 20 business days starting the day after receiving this notice, or a further period agreed with Council, otherwise the application will be taken to have not been made in accordance with section 3.7 of the Development Assessment Rules.

Should you have any queries regarding this matter please contact the undersigned on 07 4936 8099.

Yours faithfully



Brendan Standen
Senior Planning Officer
Planning and Regulatory Services

Confirmation Notice

PLANNING ACT 2016, PART 1 OF THE DEVELOPMENT ASSESSMENT RULES

Application number:	**D/163-2021**	*For further information regarding this notice, please contact:*	Brendan Standen
Date application properly made**:**	**21 December 2021**	Phone:	07 4936 8099

1. APPLICANT DETAILS

Name:	**Amcor Quarries & Concrete Pty Ltd**		
Postal address:	**Sam Lyons C/- Groundwork Plus** **PO BOX 1779** **MILTON QLD 4064**		
Contact number:	(07) 3871 0411	Email:	slyons@groundwork.com.au

2. PROPERTY DESCRIPTION

Street address:	294 Hume Road, Kabra and 397 Power Station Road, Stanwell
Real property description:	Lot 1 on RP616642 and Lot 44 on SP140243

3. OWNER DETAILS

Name:	E R Acton and K E Acton and Stanwell Corporation Ltd
Postal address:	'Millungera' JULIA CREEK QLD 4823

4. DEVELOPMENT APPROVAL SOUGHT

Development Permit for Material Change of Use for Extractive Industry (Expansion to Existing Extractive Industry) and Operational Works for Clearing Vegetation

5. APPLICATION TYPE

	Development Permit	Preliminary Approval
Development assessable under the planning scheme, a temporary local planning instrument, a master plan or a preliminary approval which includes a variation approval	☒	☐

6. REFERRAL AGENCIES

Based on the information accompanying the lodged application, in accordance with the *Planning Regulation 2017,* referral to the following Referral Agencies is required.

For an application involving	Name of agency	Role of Agency	Contact Details
CLEARING NATIVE VEGETATION			

Schedule 10, Part 3, Division 4, Table 1 – Assessable development under s 5			
Development application for operational work that is assessable development under section 5, other than an application— (a) for operational work relating to reconfiguring a lot stated in table 2, item 1, column 2; or (b) for operational work relating to a material change of use stated in table 3, item 1, column 2; or (c) that the chief executive is the assessment manager for	The chief executive of the department in which the *Planning Act 2016* is administered: State Development, Infrastructure, Local Government and Planning (State Assessment and Referral Agency Department)	Concurrence	In person: Level 2, 209 Bolsover Street, Rockhampton City Online lodgement using MyDAS2: https://prod2.dev-assess.qld.gov.au/suite/ Email: RockhamptonSARA@dsdilgp.qd.gov.au Postal: PO Box 113 Rockhampton Qld 4700
ENVIRONMENTALLY RELEVANT ACTVITIES			
Schedule 10, Part 5, Division 4, Table 2 - Non-devolved environmentally relevant activities			
Development application for a material change of use that is assessable development under section 8, if— (a) the environmentally relevant activity the subject of the application has not been devolved to a local government under the Environmental Protection Regulation; and (b) the chief executive is not the prescribed assessment manager for the application	The chief executive of the department in which the *Planning Act 2016* is administered: State Development, Infrastructure, Local Government and Planning (State Assessment and Referral Agency Department)	Concurrence	In person: Level 2, 209 Bolsover Street, Rockhampton City Online lodgement using MyDAS2: https://prod2.dev-assess.qld.gov.au/suite/ Email: RockhamptonSARA@dsdilgp.qd.gov.au Postal: PO Box 113 Rockhampton Qld 4700
INFRASTRUCTURE-RELATED REFERRALS (Electricity Infrastructure)			
Schedule 10, Part 9, Division 2, Table 2 – Material change of use of premises near a substation site or subject to an easement			
Development application for a material change of use that is assessable development under a local categorising instrument and does not relate to reconfiguring a lot, if— (a) all or part of the premises are within 100m of a substation site; or (b) both of the following apply— (i) all or part of the premises are subject to an easement for the benefit of a	The chief executive of the distribution entity or transmission entity: Powerlink	Advice	Postal: Powerlink (Property Services) PO Box 1193 Virginia Qld Email: Property@powerlink.com.au

distribution entity, or transmission entity, under the Electricity Act; (ii) the easement is for a transmission grid or supply network			
STATE TRANSPORT INFRASTRUCTURE (Generally)			
Schedule 10, Part 9, Division 4, Subdivision 1, Table 1 – Aspect of development stated in schedule 20			
Development application for an aspect of development stated in schedule 20 that is assessable development under a local categorising instrument or section 21, if— (a) the development is for a purpose stated in schedule 20, column 1 for the aspect; and (b) the development meets or exceeds the threshold— (i) for development in local government area 1—stated in schedule 20, column 2 for the purpose; or (ii) for development in local government area 2—stated in schedule 20, column 3 for the purpose; and (c) for development in local government area 1—the development is not for an accommodation activity or an office at premises wholly or partly in the excluded area However, if the development is for a combination of purposes stated in the same item of schedule 20, the threshold is for the combination of purposes and not for each individual purpose.	The chief executive of the department in which the *Planning* *Act 2016* is administered: State Development, Infrastructure, Local Government and Planning (State Assessment and Referral Agency Department)	Concurrence	In person: Level 2, 209 Bolsover Street, Rockhampton City Online lodgement using MyDAS2: https://prod2.dev-assess.qld.gov.au/suite/ Email: RockhamptonSARA@dsdilgp.qd.gov.au Postal: PO Box 113 Rockhampton Qld 4700

It is the responsibility of the applicant to give within 10 business days each referral agency a copy of -

- the application (including application form and supporting material);
- this confirmation notice; and
- any applicable concurrence agency application fee (refer to the *Planning Regulation* to confirm the applicable referral agencies).

The applicant must provide written advice to Council (as the Assessment Manager) of the day on which this action was completed.

7. IMPACT ASSESSMENT

Will Impact Assessment be required?	**YES**
The whole of the application must be publicly notified under the provisions of Part 4 of the Development Assessment Rules by:	
- Publishing a notice at least once in a newspaper circulating generally in the locality of the premises which are the subject of the application; and - Placing a notice on the premises which are the subject of the application. The notice must remain on the premises for the period of time up to and including the stated day; and - Giving a notice to all owners of any lots adjoining the premises which are the subject of the application.	

8. PUBLIC NOTIFICATION DETAILS

The application requires public notification which must be undertaken in accordance with Section 53 of the *Planning Act 2016* and Part 4 of the Development Assessment Rules.

9. INFORMATION REQUEST

A further information request may be made by the assessment manager. Regardless of this advice, any concurrence agency for the application may make an information request.

10. SUPERSEDED PLANNING SCHEME

Is the application to be assessed under a Superseded Planning Scheme?	**NO**

You are further advised that the truth and accuracy of the information provided in the application form and accompanying information is relied on when assessing and deciding this application. If you find an INACCURACY in any of the information provided above or have a query or seek clarification about any of these details, please contact Council's Development Assessment Unit.

11. ASSESSMENT MANAGER

Name: **Brendan Standen**
SENIOR PLANNING OFFICER

Signature: 

Date: 5 January 2022

Rockhampton Office
232 Bolsover St, Rockhampton
Gracemere Office
1 Ranger St, Gracemere
Mount Morgan Office
32 Hall St, Mount Morgan

19 January 2022

Our Reference: D/163-2021
Enquiries: Brendan Standen
Telephone: 07 4936 8099

Amcor Quarries & Concrete Pty Ltd
Sam Lyons C/- Groundwork Plus
PO BOX 1779
MILTON QLD 4064

Dear Sir/Madam

DEVELOPMENT APPLICATION D/163-2021 FOR MATERIAL CHANGE OF USE FOR EXTRACTIVE INDUSTRY (EXPANSION TO EXISTING EXTRACTIVE INDUSTRY) AND OPERATIONAL WORKS FOR CLEARING VEGETATION – SITUATED AT 294 HUME ROAD, KABRA AND 397 POWER STATION ROAD, STANWELL – DESCRIBED AS LOT 1 ON RP616642 AND LOT 44 ON SP140243, PARISH OF STANWELL

Council refers to your application lodged with Council on 30 November 2021. Council has determined that an Information Request is not required and you may now proceed to the next stage under the Development Assessment Rules, being the Public Notification stage.

In accordance with section 16 of the Development Assessment Rules, the applicant may start the notification period as soon as the last information request period ends. This letter is to advise that no further information is required by Council, however Referral Agencies may still request further information and the end of the Information Request period would begin once the response has been made to any Referral Agencies.

In accordance with section 16 of the Development Assessment Rules, Public Notification must take place within twenty (20) business days after the applicant complies with the last action.

Public notice must be given by:

- publishing a notice at least once in a newspaper circulating generally in the locality of the premises
- placing a notice on the premises that must remain on the premises for the period up to and including the stated day
- giving notice to the owners of all lots adjoining the premises

Schedule 3 of the DA Rules provides further information about the way in which each of the above must be undertaken in order for them to be taken as being given. This schedule also sets out what is taken to be an adjoining lot for the purposes of public notification.

The applicant is required to submit a Notice of Commencement form to Council prior to commencing the notification stage and submit a Notice of Compliance form within ten (10) business days after the notification period ceases.

Templates for the applicant can be found under Development application forms and templates on the State Planning website:
https://planning.statedevelopment.qld.gov.au/planning-framewforms-and-templates

Should you have any queries regarding this matter please contact the undersigned on 07 4936 8099.

Yours faithfully



Brendan Standen
Senior Planning Officer
Planning and Regulatory Services

25 January 2022

Our Ref: DA4569
(MSLink108255,107641)

Groundwork Plus
Po Box 1779
MILTON QLD 4064

Attention: Sam Lyons
Email: slyons@groundwork.com.au

Rockhampton Regional Council
PO Box 1860
ROCKHAMPTON QLD 4700

Attention: Brendan Standen
Email: enquiries@rrc.qld.gov.au
Application: D/163-2021

Dear Sir/Madam

Referral Confirmation notice

(Given under section 7.1 of the Development Assessment Rules)

Transmission Infrastructure Impacted	
Transmission Corridor	Stanwell Tee – Bouldercombe (132/275kv) Transmission Line and others – please refer to "Powerlink Interest Table" at foot of letter
Easement ID	Easements A on RP613929 (Dealing No. 601126786) and others – please refer to "Powerlink Interest Table" at foot of letter
Location Details	
Street address	294 Hume Road, Kabra 397 Power Station Road, Stanwell
Real property description	Lot 1 on RP616642 Lot 44 on SP140243
Local government area	Rockhampton Regional Council
Application Details	
Proposed development:	Material Change of Use for Extractive Industry (Expansion to Existing Extractive Industry) and Operational Works for Clearing Vegetation
Approval sought	Development Permit

We refer to the above referenced development application which has been referred to Powerlink Queensland in accordance with Section 54 *of the Planning Act 2016*.

In accordance with its jurisdiction under Schedule 10 Part 9 Division 2 of the *Planning Regulation 2017*, Powerlink Queensland is a **Referral Agency (Advice)** for the above development application.

Specifically, the application has been triggered for assessment by Powerlink Queensland because:

1. For **material change of use** – all of part of the premises are within 100m of a transmission substation site (Table 2 1a)
2. For **material change of use** – all or part of the premises are subject to a transmission entity easement which is part of the transmission supply network (Table 2 1b)
3. For **operational work** – all or part of the premises are subject to a transmission entity easement which is part of the transmission supply network (Table 3 1a)
4. For **operational work** – all or part of the work is within 10m of a substation site (Table 3 1b)

33 Harold Street, Virginia
PO Box 1193, Virginia, Queensland 4014, Australia
Telephone: (07) 3860 2111 Facsimile: (07) 3860 2100
www.powerlink.com.au

Powerlink Queensland is the registered business name of the Queensland Electricity Transmission Corporation Limited
ABN 82 078 849 233

Powerlink Queensland wishes to advise that the above referenced development application has been determined to be properly referred on 18 January 2022.

For further information please contact our Property Services Team via email property@powerlink.com.au who will be pleased to assist.

Yours sincerely
pKreland
for: Brandon Kingwill
MANAGER PROPERTY

Powerlink Interest Table

Property	Transmission Line Corridor	Easement ID
Lot 1 on RP616642	Stanwell Tee – Bouldercombe	A / RP613929 (Dealing No. 601126786)
Lot 44 on SP140343	Bouldercombe Tee – QR Grantleigh	
Lot 44 on SP140343	Calvale – Stanwell	Q / SP303301 (Dealing No. 719010464)
Lot 44 on SP140343	Calvale – Stanwell No. 2	B / RP886593 (Dealing No. 700603106) D / RP890296 (Dealing No. 700603106) N / RP890300 (Dealing No. 700603106)
Lot 44 on SP140343	Stanwell Asset Transfer	A / RP886593 (Dealing No. 700603106) B / RP886593 (Dealing No. 700603106) C / RP886594 (Dealing No. 700603106) D / RP890296 (Dealing No. 700603106) E / RP890297 (Dealing No. 700603106) F / RP890298 (Dealing No. 700603106) G / RP890299 (Dealing No. 700603106) N / RP890300 (Dealing No. 700603106) H / RP890301 (Dealing No. 700603106) M / RP890304 (Dealing No. 700603106) P / RP890304 (Dealing No. 700603106)
Lot 44 on SP140343	Stanwell – Broadsound	
Lot 44 on SP140343	Stanwell – QRN Wycarbah	R / SP242400 (Dealing No. 714018106)
Lot 44 on SP140343	Stanwell Substation	
Lot 44 on SP140343	Stanwell Tee - Bouldercombe	

2 February 2022

Our Ref: DA4569
(MSLink108255,107641)

Groundwork Plus
Po Box 1779
MILTON QLD 4064

Attention: Sam Lyons
Email: slyons@groundwork.com.au

Rockhampton Regional Council
PO Box 1860
ROCKHAMPTON QLD 4700

Attention: Brendan Standen
Email: enquiries@rrc.qld.gov.au
Application: D/163-2021

Dear Sir/Madam

Referral Agency Response (Advice)
(Given under section 9.2 of the Development Assessment Rules)

Transmission Infrastructure Impacted	
Transmission Corridor	Stanwell Tee – Bouldercombe (132/275kv) Transmission Line and others – please refer to "Powerlink Interest Table" at foot of letter
Easement ID	Easements A on RP613929 (Dealing No. 601126786) and others – please refer to "Powerlink Interest Table" at foot of letter
Location Details	
Street address	294 Hume Road, Kabra 397 Power Station Road, Stanwell
Real property description	Lot 1 on RP616642 Lot 44 on SP140243
Local government area	Rockhampton Regional Council
Application Details	
Proposed development:	Material Change of Use for Extractive Industry (Expansion to Existing Extractive Industry) and Operational Works for Clearing Vegetation
Approval sought	Development Permit

We refer to the above referenced development application which has been referred to Powerlink Queensland in accordance with Section 54 *of the Planning Act 2016.*

In accordance with its jurisdiction under Schedule 10 Part 9 Division 2 of the *Planning Regulation 2017,* Powerlink Queensland is a **Referral Agency (Advice)** for the above development application.

Specifically, the application has been triggered for assessment by Powerlink Queensland because:

1. For **reconfiguring a lot** – all or part of the lot is subject to a transmission entity easement which is part of the transmission supply network (Table 1 1(a)
2. For **reconfiguring a lot** – part of the lot is within 100m of a transmission substation site (Table 1 1b)
3. For **operational work** – all or part of the premises are subject to a transmission entity easement which is part of the transmission supply network (Table 3 1a)
4. For **operational work** – all or part of the work is within 10m of a substation site (Table 3 1b)

33 Harold Street, Virginia
PO Box 1193, Virginia, Queensland 4014, Australia
Telephone: (07) 3860 2111 Facsimile: (07) 3860 2100
www.powerlink.com.au

Powerlink Queensland is the registered business name of the Queensland Electricity Transmission Corporation Limited
ABN 82 078 849 233

PLANS AND REPORTS ASSESSED

The following plans and reports have been reviewed by Powerlink Queensland and form the basis of our assessment. Any variation to these plans and reports may require amendment of our advice.

Table 1: Plans and Reports upon which the assessment is based

Drawing / Report Title	Prepared by	Dated	Reference No.	Version / Issue
Site Layout Plan	Groundworks Plus	20/07/2021 (assessed 02/02/2022)	1662.DRG.015	

Powerlink Queensland, acting as a Referral Agency (Advice) under the Planning Regulation 2017 provides its response to the application as attached **(Attachment 1)**.

Please treat this response as a properly made submission for the purposes of Powerlink being an eligible advice agency in accordance with the *Planning Act 2016*.

For further information please contact our Property Services Team via email property@powerlink.com.au who will be pleased to assist.

Yours sincerely
KHeland
for: Brandon Kingwill
MANAGER PROPERTY

Powerlink Interest Table

Property	Transmission Line Corridor	Easement ID
Lot 1 on RP616642	Stanwell Tee – Bouldercombe	A / RP613929 (Dealing No. 601126786)
Lot 44 on SP140343	Bouldercombe Tee – QR Grantleigh	
Lot 44 on SP140343	Calvale – Stanwell	Q / SP303301 (Dealing No. 719010464)
Lot 44 on SP140343	Calvale – Stanwell No. 2	B / RP886593 (Dealing No. 700603106) D / RP890296 (Dealing No. 700603106) N / RP890300 (Dealing No. 700603106)
Lot 44 on SP140343	Stanwell Asset Transfer	A / RP886593 (Dealing No. 700603106) B / RP886593 (Dealing No. 700603106) C / RP886594 (Dealing No. 700603106) D / RP890296 (Dealing No. 700603106) E / RP890297 (Dealing No. 700603106) F / RP890298 (Dealing No. 700603106) G / RP890299 (Dealing No. 700603106) N / RP890300 (Dealing No. 700603106) H / RP890301 (Dealing No. 700603106) M / RP890304 (Dealing No. 700603106) P / RP890304 (Dealing No. 700603106)
Lot 44 on SP140343	Stanwell – Broadsound	
Lot 44 on SP140343	Stanwell – QRN Wycarbah	R / SP242400 (Dealing No. 714018106)
Lot 44 on SP140343	Stanwell Substation	
Lot 44 on SP140343	Stanwell Tee - Bouldercombe	

ATTACHMENT 1 – REFERRAL AGENCY (ADVICE) RESPONSE

Powerlink Queensland **supports** this application subject to the inclusion of the following conditions in the Assessment Manager's Decision Notice.

No.	Condition	Timing	Reason
1	The development must be carried out generally in accordance with the reviewed plans detailed in Table 1.	At all times.	To ensure that the development is carried out generally in accordance with the plans of development submitted with the application.
2	The statutory clearances set out in the *Electrical Safety Regulation 2013* must be maintained during construction and operation. No encroachment within the statutory clearances is permitted.	At all times.	To ensure that the purpose of the *Electrical Safety Act 2002* is achieved and electrical safety requirements are met.
3	Compliance with the terms and conditions of the easement dealing no. shown in the heading of this letter.	At all times.	To ensure that the existing rights contained in the registered easement dealings are maintained.
4	Compliance with the generic requirements in respect to proposed works in the vicinity of Powerlink Queensland infrastructure as detailed in the enclosed Annexure "A".	At all times.	To ensure that the purpose of *the Electrical Safety Act 2002* is achieved and electrical safety requirements are met. To ensure the integrity of the easement is maintained.

Advice to Council and the Applicant

1. This response **does not** constitute an approval to commence any works within the easement. Prior written approval is required from Powerlink Queensland before any work is undertaken within the easement areas. All works on easement (including but not limited to earthworks, drainage and detention basins; road construction; underground and overhead service installation) require detailed submissions, assessments and consent (or otherwise) by Powerlink.

2. In order for Powerlink to maintain and operate a safe and reliable supply of electricity, we require unrestricted 24-hour access to our corridors and infrastructure.

   We will require practical access (typically by 4WD vehicle – but to standard no less than existing) to the Powerlink structures.

   If it is envisaged that there will be any interference or alteration to our current access arrangements prior, during or after the completion of your works, we require that the applicant contacts our Easement Maintenance Service Provider (Ergon Energy – Peter Gorrie – ph 0417 199 931) to formalise unrestricted 24-hour access arrangements.

3. Compliance with the Electrical Safety Act 2002 including any Code of Practice under the Act and the Electrical Safety Regulation 2013 including any safety exclusion zones defined in the Regulation.

   In respect of this application, the exclusion zone for untrained persons and for operating plant operated by untrained persons is **three (3) metres** from the **132,000-volt** wires and exposed electrical part and **six (6) metres** from the **275,000-volt** wires and exposed electrical parts.

   Should any doubt exist in maintaining the prescribed clearance to the conductors and electrical infrastructure, then the applicant is obliged under the Act to seek advice from Powerlink.

Additional Advice to the Applicant

4. While the quarry boundary is located outside of the easement boundary, certain activity can still impact the operation of the high voltage network, especially in relation to ground movement impacting the stability of the towers.

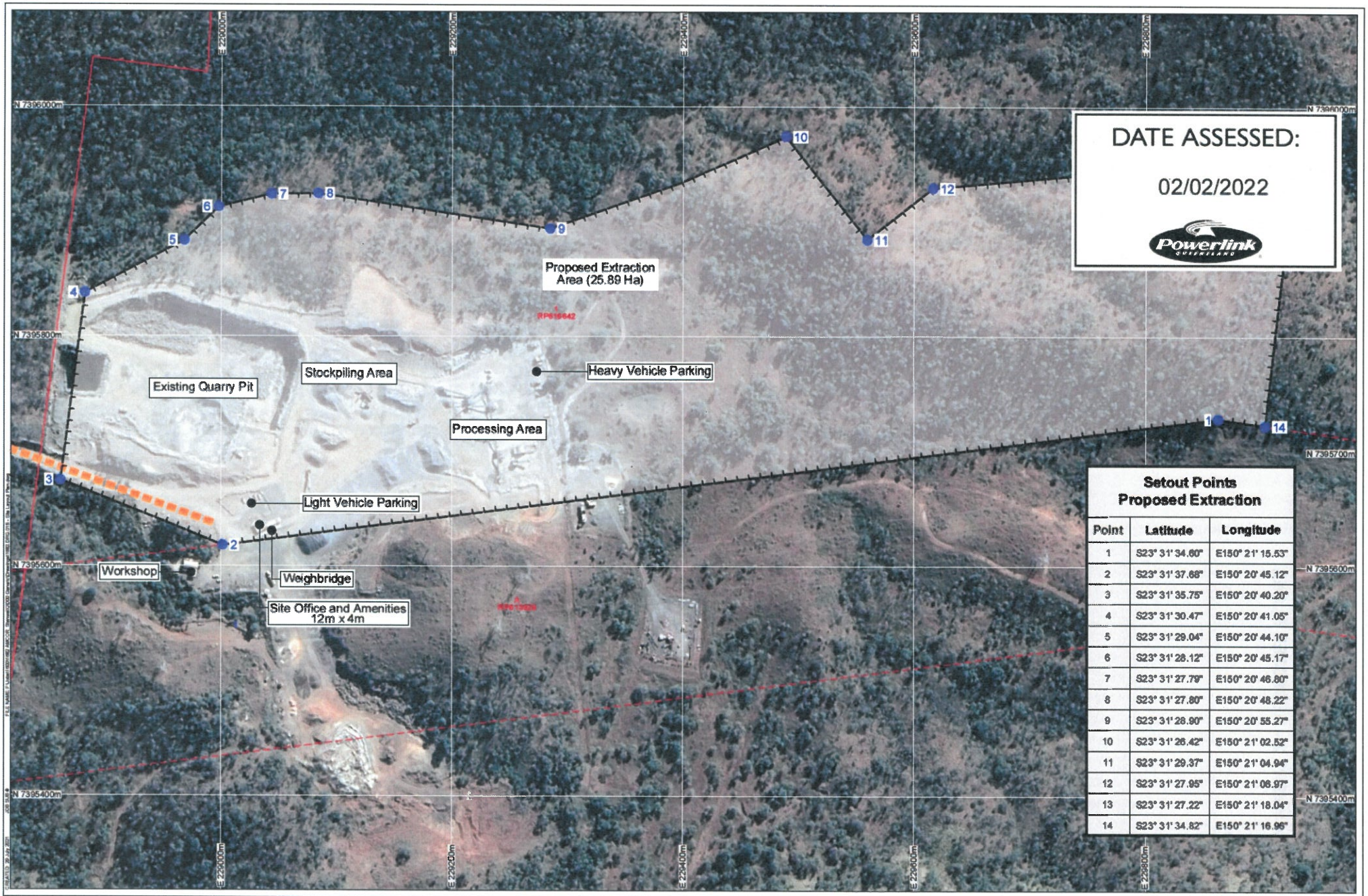
   Powerlink requests that should the removal of material come within 50m of the edge of the easement, information regarding excavation (i.e.; depth of pit, slope of batter, etc.) is submitted for assessment. This will allow Powerlink the opportunity to assess any potential impacts on the towers located adjacent to the mining activity.

5. Powerlink advises it has the following requirements when undertaking blasting within 500m of power lines.

   All blasting within a Powerlink easement or adjacent to Powerlink infrastructure must comply with the following:

   - Satisfactory safety procedures are observed.
   - The safe operation of the line is not jeopardised.
   - Blasting procedures are carried out in accordance with AS 2187.
   - Blasting mats and safety fuses are used.
   - Generally no blasting will be allowed within 100m of Powerlink infrastructure.
   - Blasting in close proximity (between 100m and 500m) to Powerlink's overhead transmission lines or substations should meet the following requirements:
     - A blasting plan is submitted with the application. The blasting plan is to include a locality plan, predicted PPV, and contact details.
     - The Peak Particle Velocity (PPV) is not to exceed 100mm/sec, for power line structures and 50mm/sec (as per AS 2187) for buildings,
     - A seismic control device is set up to record the readings,
     - Ensure fly rock air blast control by means of adequate matting,
     - In the interest of air blast control, only single shot blasting shall be allowed.
     - Powerlink must be supplied with PPV results after the blast to confirm that the predicted PPV correlates with the actual PPV.
   - Powerlink may require a monitor on site, for which Powerlink will recover costs from the applicant.
   - Powerlink reserves the right to withdraw its consent if, in its opinion, the blasting process becomes hazardous and likely to result in interruptions to the Powerlink transmission network.
   - The applicant must give at least seven days prior notice of the commencement of blasting. This allows time for arrangements to be made for monitoring of and/or precautionary instructions to be issued in terms of the blasting operation.

ATTACHMENT 2 – ASSESSED PLANS



Setout Points Proposed Extraction

Point	Latitude	Longitude
1	S23° 31' 34.60"	E150° 21' 15.53"
2	S23° 31' 37.68"	E150° 20' 45.12"
3	S23° 31' 35.75"	E150° 20' 40.20"
4	S23° 31' 30.47"	E150° 20' 41.05"
5	S23° 31' 29.04"	E150° 20' 44.10"
6	S23° 31' 28.12"	E150° 20' 45.17"
7	S23° 31' 27.79"	E150° 20' 46.80"
8	S23° 31' 27.80"	E150° 20' 48.22"
9	S23° 31' 28.90"	E150° 20' 55.27"
10	S23° 31' 26.42"	E150° 21' 02.52"
11	S23° 31' 29.37"	E150° 21' 04.94"
12	S23° 31' 27.95"	E150° 21' 06.97"
13	S23° 31' 27.22"	E150° 21' 18.04"
14	S23° 31' 34.82"	E150° 21' 16.96"

REV	DESCRIPTION	DATE	BY
1	Proposed Extraction Area updated	29/07/2021	MF

Legend:
- Site Boundary
- Cadastral Boundary
- Easement Boundary
- Proposed Extraction Area
- Haul Road

PROJECT: Stanwell Quarry Extension

CLIENT: AMCOR Quarries & Concrete

TITLE: Site Layout Plan

GROUNDWORK plus

SCALE: 1:2,000 When Printed On A3 — 0 — 40m

DRAWING NUMBER: 1662.DRG.015

REVISION: 1

DATE: 29 July 2021 DRAWN: BRESCAR

PRINTED: 29 July 2021 CHECKED: GLYONS

DATUM: HORIZONTAL/VERTICAL/ZONE: WGS / /

ANNEXURE A – GENERIC REQUIREMENTS

The conditions contained in this Annexure have been compiled to assist persons (the applicant) intending to undertake work within the vicinity of high-voltage electrical installations and infrastructure owned or operated by Powerlink. The conditions are supplementary to the provisions of the Electrical Safety Act 2002, Electrical Safety Regulation 2013 and the Terms and Conditions of Registered Easements and other forms of Occupational Agreements hereinafter collectively referred to as the "Easement". Where any inconsistency exists between this Annexure and the Easement, the Easement shall take precedence.

1. POWERLINK INFRASTRUCTURE

You may not do any act or thing which jeopardises the foundations, ground anchorages, supports, towers or poles, including (without limitation) inundate or place, excavate or remove any soil, sand or gravel within a distance of twenty (20) metres surrounding the base of any tower, pole, foundation, ground anchorage or support.

2. STRUCTURES

No structures should be placed within twenty (20) metres of any part of a tower or structure foundation or within 5m of the conductor shadow area. Any structures on the easement require prior written consent from Powerlink.

3. EXCLUSION ZONES

Exclusion zones for operating plant are defined in Schedule 2 of the Electrical Safety Regulation 2013 for Untrained Persons. All Powerlink infrastructure should be regarded as "electrically live" and therefore potentially dangerous at all times.

In particular your attention is drawn to Schedule 2 of the Electrical Safety Regulation 2013 which defines exclusion zones for untrained persons in charge of operating plant or equipment in the vicinity of electrical facilities. If any doubt exists in meeting the prescribed clearance distances from the conductors, the applicant is obliged under this Act to seek advice from Powerlink.

4. ACCESS AND EGRESS

Powerlink shall at all times retain the right to unobstructed access to and egress from its infrastructure. Typically, access shall be by 4WD vehicle.

5. APPROVALS (ADDITIONAL)

Powerlink's consent to the proposal does not relieve the applicant from obtaining statutory, landowner or shire/local authority approvals.

6. MACHINERY

All mechanical equipment proposed for use within the easement must not infringe the exclusion zones prescribed in Schedule 2 of the Electrical Safety Regulation 2013. All operators of machinery, plant or equipment within the easement must be made aware of the presence of live high-voltage overhead wires. It is recommended that all persons entering the Easement be advised of the presence of the conductors as part of on site workplace safety inductions. The use of warning signs is also recommended.

ANNEXURE A – GENERIC REQUIREMENTS

7. EASEMENTS

All terms and conditions of the easement are to be observed. Note that the easement takes precedence over all subsequent registered easement documents. Copies of the easement together with the plan of the Easement can be purchased from the Department of Environment & Resource Management.

8. EXPENDITURE AND COST RECOVERY

Should Powerlink incur costs as a result of the applicant's proposal, all costs shall be recovered from the applicant.

Where Powerlink expects such costs to be in excess of $10 000.00, advanced payments may be requested.

9. EXPLOSIVES

Blasting within the vicinity (500 metres) of Powerlink infrastructure must comply with AS 2187. Proposed blasting within 100 metres of Powerlink infrastructure must be referred to Powerlink for a detailed assessment.

10. BURNING OFF OR THE LIGHTING OF FIRES

We strongly recommend that fires not be lit or permitted to burn within the transmission line corridor and in the vicinity of any electrical infrastructure placed on the land. Due to safety risks Powerlink's written approval should be sort.

11. GROUND LEVEL VARIATIONS

Overhead Conductors

Changes in ground level must not reduce statutory ground to conductor clearance distances as prescribed by the Electrical Safety Act 2002 and the Electrical Safety Regulation 2013.

Underground Cables

Any change to the ground level above installed underground cable is not permitted without express written agreement of Powerlink.

12. VEGETATION

Vegetation planted within an easement must not exceed 3.5 metres in height when fully matured. Powerlink reserves the right to remove vegetation to ensure the safe operation of the transmission line and, where necessary, to maintain access to infrastructure.

13. INDEMNITY

Any use of the Easement by the applicant in a way which is not permitted under the easement and which is not strictly in accordance with Powerlink's prior written approval is an unauthorised use. Powerlink is not liable for personal injury or death or for property loss or damage resulting from unauthorized use. If other parties make damage claims against Powerlink as a result of unauthorized use then Powerlink reserves the right to recover those damages from the applicant.

ANNEXURE A – GENERIC REQUIREMENTS

14. INTERFERENCE

The applicant's attention is drawn to s.230 of the Electricity Act 1994 (the "Act"), which provides that a person must not wilfully, and unlawfully interfere with an electricity entity's works. "Works" are defined in s.12 (1) of the Act. The maximum penalty for breach of s.230 of the Act is a fine equal to 40 penalty units or up to 6 months imprisonment.

15. REMEDIAL ACTION

Should remedial action be necessary by Powerlink as a result of the proposal, the applicant will be liable for all costs incurred.

16. OWNERS USE OF LAND

The owner may use the easement land for any lawful purpose consistent with the terms of the registered easement; the conditions contained herein, the Electrical Safety Act 2002 and the Electrical Safety Regulation 2013.

17. ELECTRIC AND MAGNETIC FIELDS

Electric and Magnetic Fields (EMF) occur everywhere electricity is used (e.g. in homes and offices) as well as where electricity is transported (electricity networks).

Powerlink recognises that there is community interest about Electric and Magnetic Fields. We rely on expert advice on this matter from recognised health authorities in Australia and around the world. In Australia, the Federal Government agency charged with responsibility for regulation of EMFs is the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). ARPANSA's *Fact Sheet – Magnetic and Electric Fields from Power Lines*, concludes:

"On balance, the scientific evidence does not indicate that exposure to 50Hz EMF's found around the home, the office or near powerlines is a hazard to human health."

Whilst there is no scientifically proven causal link between EMF and human health, Powerlink nevertheless follows an approach of "*prudent avoidance*" in the design and siting of new powerlines. This includes seeking to locate new powerline easements away from houses, schools and other buildings, where it is practical to do so and the added cost is modest.

The level of EMF decreases rapidly with distance from the source. EMF readings at the edge of a typical Powerlink easement are generally similar to those encountered by people in their daily activities at home or at work. And in the case of most Powerlink lines, at about 100 metres from the line, the EMF level is so small that it cannot be measured.

Powerlink is a member of the ENA's EMF Committee that monitors and compiles up-to-date information about EMF on behalf of all electricity network businesses in Australia. This includes subscribing to an international monitoring service that keeps the industry informed about any new developments regarding EMF such as new research studies, literature and research reviews, publications, and conferences.

We encourage community members with an interest in EMF to visit ARPANSA's website: www.arpansa.gov.au Information on EMF is also available on the ENA's website: www.ena.asn.au

Queensland Government

SARA reference: 2201-26872 SRA
Council reference: DA/163-2021

8 February 2022

AMCOR Quarries and Concrete Pty Ltd
PO Box 1779
MILTON QLD 4064
planning@groundwork.com.au

Attention: Sam Lyons

Dear Sam

SARA information request - 294 Hume Road, Kabra and 397 Power Station Road, Stanwell

(Given under section 12 of the Development Assessment Rules)

This notice has been issued because the State Assessment and Referral Agency (SARA) has identified that information necessary to assess your application against the relevant provisions of the State Development Assessment Provisions (SDAP) has not been provided.

Environmentally relevant activities	
General	
1.	**Issue** The material submitted as part of the application has not demonstrated compliance with SDAP State code 22: Environmentally relevant activities (State code 22). **Action** Submit the following information: 1. Provide a map that provides a sufficient number of GPS co-ordinates (GDA94 format to at least four decimal places) to define the boundary/ies of all disturbed areas of the proposed activity. Disturbed areas includes existing and proposed: a. Extraction areas; b. Stockpiling areas; c. Processing (i.e. crushing and screening) areas; d. Stormwater drainage locations; e. Internal roads, etc. To assist in assessment of the proposed impacts against available environmental value mapping it would be appreciated if the map could also be provided electronically in the form of a *.KML or *.KMZ shapefile.

DA Advisory Team (DAAT)
Level 13, 1 William Street, Brisbane
PO Box 15009 CITY EAST QLD 4002

	2. Confirm the current quarry footprint in hectares and the size of the proposed expansion area. 3. Noting the EA is operating under a threshold of 1,000,000 tonnes per year confirm: a. the expected maximum annual production weight from the operation b. the expected increase in production from the current extraction area to the proposed expanded quarry site c. the existing infrastructure on site and the infrastructure required for the proposed expansion area.
Noise	
2.	**Issue** The application submitted has not demonstrated compliance with PO1 of State code 22, relating to noise impacts. **Action** Submit confirmation of the expected maximum noise levels at the nearest sensitive receptor for noise. Identify the potential increase in impacts expected as a result of drilling and blasting activities.
Air	
3.	**Issue** The application submitted has not demonstrated compliance with PO2 of State code 22, relating to air impacts. **Action** Submit confirmation of the level of impacts to air that are expected to be present at the nearest sensitive receptor.
Great Barrier Reef Catchment waters – Environmental Protection Regulation 2019	
4.	**Issue** The project area is within the Great Barrier Reef catchment, therefore section 41AA will apply Environmental Protection Regulation 2019 (EP Regulation) when assessing this application. As of 1 June 2021, the administering authority must have consideration to section 41AA of the EP Regulation when making an environmental management decision relating to an activity that is, or will be, carried out in the Great Barrier Reef catchment. According to section 41AA(3) of the EP Regulation the administering authority must refuse to grant the application if the authority considers that – i. The relevant activity will, or may, have a residual impact; and ii. Having regard to the matters mentioned in the water quality offset policy, the residual impact will not be adequately counterbalanced by offset measures for the relevant activity. **Action** Submit the following information to demonstrate compliance with section 41AA if the EP Regulation and the provided definition for residual impact: a) a description of the location of a release and indicate whether it is within the GBR catchment waters, and the applicable river basin. A site map which can be provided in hardcopy or digital format, preferably in accordance with the minimum requirements in the department's guideline: Spatial information submission (ESR/2018/4337)1

	b) if the release is from a point source and the location of the end of pipe c) a description of the potential source of the DIN/fine sediment to be released and whether the wastewater is a result of the relevant activity d) a description of any wastewater releases that may not be included in the section 41AA such as any predicted unplanned/uncontrolled releases, watercourse diversions, clean stormwater diverted around disturbed areas or stormwater that contains only sediment e) the characteristics of the wastewater to be released from the relevant activity subject of the application (e.g., load, concentration, volume, release rate, timing and duration of release). f) the characteristics of the receiving environment (e.g. water type (freshwater, marine, tidal), environmental values, sensitive receptors). g) the spatial and temporal extent of potential changes in stream hydrology or estuarine hydraulics and water quality (regarding an increase in DIN/fine sediment). h) demonstration there will be no residual impact from the relevant activity, or that all residual impacts are avoided, minimised or offset. Residual impact must be measured in load of fine sediment and/or dissolved inorganic nitrogen (DIN) in water and means the total mass of the fine sediment or DIN in thew aster measured over a period of time. Modelling may be provided to support the application, for which the department has published a modelling principles document for guidance. i) describe the proposed mitigation measures and any residual loads remaining after any avoidance and minimisation measures. The application should account for all proposed loads of DIN/fine sediment. Consider the management hierarchy (Section 14 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019).
Biodiversity	
5.	**Issue** The application submitted has not demonstrated compliance with State code 22, relating to prescribed environmental matters. **Action** Submit confirmation that the proposed area of disturbance for all potentially present prescribed environmental matters relevant to the project area.

How to respond

You have three months to respond to this request and the due date to SARA is 9 May 2022**.**
You may respond by providing either: (a) all of the information requested; (b) part of the information requested; or (c) a notice that none of the information will be provided. Further guidance on responding to an information request is provided in section 13 of the Development Assessment Rules (DA Rules).

It is recommended that you provide all the information requested above. If you decide not to provide all the information requested, your application will be assessed and decided based on the information provided to date.

You are requested to upload your response and complete the relevant tasks in MyDAS2.

[1] This is the publication number. The publication number can be used as a search term to find the latest version of a publication at www.qld.gov.au.

As SARA is a referral agency for this application, a copy of this information request will be provided to the assessment manager in accordance with section 12.4 of the DA Rules.

If you require further information or have any questions about the above, please contact Rebecca Carpenter, Principal Planner, on 07 3452 7477 or via email DAAT@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely



Sallie Battist
Manager

cc Rockhampton Regional Council, enquiries@rrc.qld.gov.au

Development details	
Description:	Development permit — Material change of use for Extractive Industry (Expansion to Existing Extractive Industry) Operational Works for Clearing Vegetation
SARA role:	Referral agency
SARA trigger:	Schedule 10, Part 3, Division 4, Table 1 (Planning Regulation 2017) - Clearing of native vegetation Schedule 10, Part 5, Division 4, Table 2 (Planning Regulation 2017) - Environmentally relevant activities (only if ERA has not been devolved to a local government) Schedule 10, Part 9, Division 4, Subdivision 1, Table 1 (Planning Regulation 2017) - Infrastructure – State transport infrastructure
SARA reference:	2201-26872 SRA
Assessment criteria:	State Development Assessment Provisions (SDAP) version 2.6 being: • State code 6: Protection of state transport infrastructure • State code 16: Native vegetation clearing • State code 22: Environmental relevant activities

Queensland Government

Our reference: 2201-26872 SRA
Your reference: 1662_DA1_315_001

24 January 2022

AMCOR Quarries and Concrete Pty Ltd
PO Box 1779
MILTON QLD 4064
planning@groundwork.com.au

Attention: Sam Lyons

Dear AMCOR Quarries and Concrete Pty Ltd

Referral confirmation notice
(Given under section 7 of the Development Assessment Rules)

The development application described below is taken to be properly referred to the State Assessment and Referral Agency (SARA) under Part 2: Referral of the Development Assessment Rules.

Location details

Street address:	294 Hume Road, Kabra; 397 Power Station Road, Stanwell
Real property description:	Lot 1 on RP616642; Part of Lot 44 on SP140243
Local government area:	Rockhampton Regional Council

Application details

Development permit	Material change of use for Extractive Industry (Expansion to Existing Extractive Industry) and Operational Works for Clearing Vegetation

The referral confirmation period ended on 24 January 2022. SARA's assessment will be under the following provisions of the Planning Regulation 2017:

- 10.3.4.1.1 Clearing native vegetation
- 10.5.4.2.1 Environmentally relevant activities (only if ERA has not been devolved to a local government)
- 10.9.4.1.1.1 Infrastructure - state transport infrastructure

For further information please contact Thomas Gardiner, Principal Planning Officer, on (07) 4924 2916 or via email RockhamptonSARA@dsdilgp.qld.gov.au who will be pleased to assist.

Fitzroy/Central regional office
Level 2, 209 Bolsover Street,
Rockhampton
PO Box 113, Rockhampton QLD 4700

Yours sincerely



###Secondary2###
Manager (Planning)

cc Rockhampton Regional Council, enquiries@rrc.qld.gov.au