



Carmichael Coal Mine and Rail Project Supplementary Environmental Impact Statement

Volume 4, Appendix C4d – Airport Approval Application

Containing

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Planning Assessment Report: Airport

17th July 2013



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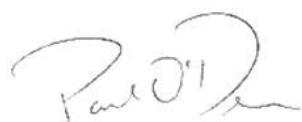
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Originating Office:	Brisbane	Job Number:	5370
Physical Address:	Level 8	Job Name:	Adani Mining Pty Ltd
	97 Creek Street	Project Manager:	Gary Savins
	QLD 4000	Document Title:	Planning Assessment Report
Postal Address:	GPO Box 999	Author:	Paul Creighton
	BRISBANE .Q. 4001	Client:	Adani Mining Pty Ltd
Phone:	+61 7 3221 6732	Client Contact:	Melinda Bergmann
Fax:	+61 7 3221 7308	Client Reference:	AMPL_MINE_SO_2013_821_RO
Email:	mail@gassman.com.au		
Web:	www.gassman.com.au		

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1.0 Executive Summary

Gassman Development Perspectives have been commissioned to complete and compile the necessary application material for inclusion within the Supplementary Environmental Impact Statement ('SEIS') for the Carmichael Coal Mine and Rail Project (the 'Project') for a number of offsite infrastructure items. The SEIS submission that is being prepared is to expand the original Environmental Impact Statement (EIS) previously submitted for the Project. The aim of this approach is to minimise overall assessment timeframes following determination of the EIS.

This application material relates to a development permit for a material change of use for an airport and associated environmentally relevant activities and operational works aspects. The location planned for the airport is located within the Moray Downs property, which is formally known as Lot 662 on PH1491. This form of development on the subject site has been defined as 'Impact Assessable Development' by the Isaac Regional Council Planning Scheme (the Planning Scheme for Belyando) and this application material has been prepared to reflect this impact assessable nature.

The airport has been designed such that it comprises two (2) separate phases to ensure that appropriate facilities are in place to meet the changing demands on the airport. The airport has been strategically located such that the runway is in a north-west orientation to capitalise on local wind patterns and is also within close proximity to the Mine Workers Accommodation Village ('MWAV'), whilst still being appropriately separated in order to ensure that direct flight paths do not occur over the MWAV.

This report demonstrates how the proposal is considered generally consistent with the planning context for the State, region and the local area and ensures that no unreasonable environmental or cultural features are adversely impacted upon as result. Accordingly, the proposed development is considered a suitable and appropriate form of development ideally located within close proximity to the MWAV whilst still being off-set to minimise potential adverse amenity impacts.

This application also forms part of a broader planning and approvals strategy in the sense that an overarching s242 Preliminary Approval application has also been prepared independently to this application and is to be included within the SEIS submission. This s242 Preliminary Approval application has been drafted such that it authorises the current intent for the airport whilst also enabling sufficient flexibility and growth of the airport over time.

2.0 Site and Application Summary

Table 1: Site and application summary

Site Details	
Site Address:	5509 Elgin Road, Clermont QLD 4721
Real Property Description:	Part Lot 662 on PH1491
Real Property Area:	117,000 ha
Subject Site Area	154.8 ha
Local Authority:	Isaac Regional Council

Table 2: Application Characteristics Summary

Application Details	
Approval Type	Development Permits for: Material Change of Use: - Airport; and - ERA 63 - Sewage Treatment Operational Works: - Vegetation Clearing; and - Bulk Earthworks
Level of Assessment	Impact Assessable
Application Form(s)	IDAS Forms 1, 5, 6, 8 & 11
Public Notification	To be advertised in conjunction with SEIS/EIS notification. No additional IDAS public notification is required
Applicant:	Adani Mining Pty Ltd c/o Gassman Development Perspectives GPO Box 999 Brisbane. Q. 4001
Contact Person(s):	Gary Savins
Application Reference:	5370

Table 3: Planning Assessment Characteristics Summary

Planning Details	
Regional Plan:	Mackay, Isaac and Whitsunday Regional Plan 2012-2031
Regional Plan Land Use Designation:	Regional Landscape and Rural Production Area
Planning Scheme:	Belyando Planning Scheme 2008
Planning Scheme Zone:	Rural Zone
Assessment Level:	Impact Assessable

Table 4: Proposal Summary

Proposal Details	
Purpose / Description of Proposal:	The proposed development is to provide the appropriate land use permit to establish an airport and associated facilities to provide safe and efficient access to the planned mine.
Development Stages Proposed	The proposed development has been designed such that it can be constructed in a maximum of two (2) stages.
Assessment Process	The relevant reporting relating to this proposal will be incorporated within the SEIS which will be lodged with the Coordinator General as part of the broader consideration of the Project. Subject to the determination of the EIS, an accelerated form of SPA IDAS assessment is available.

3.0 Site Information

3.1 Site Location

The location identified for the airport has an area of approximately 154.8 ha, and is located approximately 400 metres to the south east of Moray Carmichael Road. The location is also approximately 75km west of the Gregory Developmental Road. The subject site will be accessed via the proposed realigned Moray Carmichael Road and access to the airport and specifically the terminal facilities is to be provided via a new road connection from Moray Carmichael Road.



Figure 1: Aerial imagery, Source: Adani Mining Pty Ltd

In terms of location context, the area identified for the airport is located approximately:

- 75 km from the Gregory Developmental Road;
- 214 km (5 hrs 19 mins) to Clermont;
- 317 km (6 hrs 22 mins) to Emerald; and
- 335 km (6 hrs 39 mins) to Charters Towers; and
- 916 km (12 hrs) to Cairns (international airport).

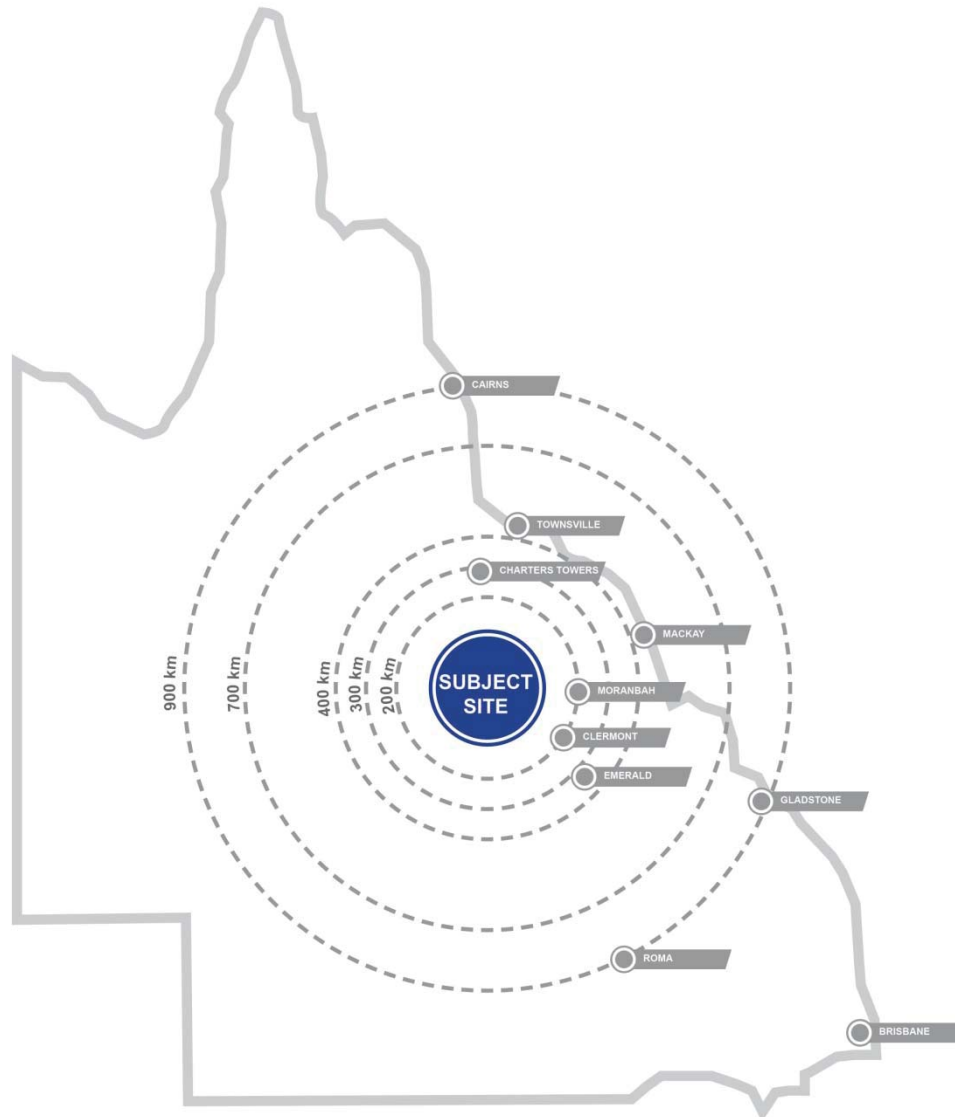


Figure 2: Site Context, Source: GDP

3.2 Site Characteristics

Table 5: Site Characteristics of Chosen Airport Location

Site Characteristic	Description
Land Use	The location is currently vacant reflective of its traditional use associated with agriculture.
Frontage & Access	The location will be accessed directly from the Moray Carmichael Road via an approximate 2 km long new access road.
Topography & Views	The majority of the location is relatively flat, with levels between RL 221.50 m AHD and 227 m AHD. The existing site topography naturally falls in two separate directions from a central ridgeline, with one towards the north-west and the second to the south-east.
Existing Vegetation	The location is predominately clear of significant vegetation; however there are some sporadic patches of existing vegetation around the fringes.
Contaminated Land	The location is not known to be contaminated.
Wetlands	The location is not in close proximity to an identified wetland.
Heritage Areas	The location has not been identified as containing any significant heritage assets or is adjacent to any identified heritage areas.
Conservation Areas	The location has not been identified as being subject to any known conservation status.

3.3 Site Photos



Figure 3: View 1 of approximate Airport Location, Source: GDP, 2012



Figure 4: View 2 of approximate Airport Location, Source: GDP, 2012

4.0 The Proposal

This application material has been prepared and relates to a development approval for the following aspects:

- Material Change of Use – Airport and ERA 63 Sewage Treatment; and
- Operational Works – Vegetation Clearing and Bulk Earthworks.

4.1 Overview

The application relates to the construction and operation of a private airport on the Moray Downs property. This airport forms one of the core elements of the off-site infrastructure items planned to support the mine. Specifically, the airport is to function as the key destination portal to the site for the workforce and will also provide an important emergency and safety access point.

The airport has been designed such that it could potentially be developed in a maximum of two (2) stages such that it can appropriately cater for the increasing demands likely to be placed on it over the varying stages of the mine. Whilst a two (2) staged approach may be undertaken, it is considered just as likely that the ultimate/final stage of the airport will be constructed prior to the commencement of use. The basis and core framework utilised for the assessment of an airport against the applicable regulatory and statutory provisions has been based on the ultimate design.

There are four (4) application components based on two (2) aspects of development included within this application material. Details of each of these aspects are outlined below:

4.1.1 MCU Airport

The Airport has been designed in direct response to the requirements that will be placed upon it to act as the key gateway portal to the site. Further as already discussed the Airport has also been designed such that it can be constructed in two (2) stages, whilst ensuring key functions and services are available for each stage. It is considered likely however that the full construction of the Airport will occur in lieu of any initial stage. The final airport stage is to include a range of components including that of a low-set terminal building; large apron; car parking and drop-off zones and emergency and security services. The chosen location for the

Airport has been strategically selected to ensure that it is conveniently located in relation to both the accommodation village and mine, whilst ensuring that takeoff and landing approach paths are offset from the accommodation village to minimise potential noise disturbance and disruption.

The design philosophy of key aspects of the planned Airport can be characterised as follows:

- A 2250m x 30m asphalt runway strip;
- Apron of dimension 100m x 70m;
- Multi-function terminal building (circa 800m²) providing security, amenities, café and departure lounge functions;
- Security fencing and stock proof fencing;
- Inclusion of appropriate visual, navigation and lighting aids;
- Car and bus parking for up to 62 cars and 4 buses;
- Passenger set down and pick up area;
- Ancillary emergency fuel storage of up to 500m³; and
- Aerodrome Rescue and Fire Fighting Services (AFRRS) facilities.

The first stage of the Airport, if constructed, provides the foundation for a number of the key aspects outlined above however a number of components are not included / constructed to the full extent. These include those in relation to the terminal building, full length runway and all weather construction.

4.1.2 ERA On-Site Effluent Disposal

The on-site effluent disposal system is to be located to the east of the terminal/apron area and north of the entrance road to the Airport.

The proposed sewer strategy for the Airport will involve collection of waste effluent via a Gravity Sewer Reticulation and conveyance to a package sewage treatment plant on site. The location of the treatment plant is to be to the east of the terminal building near the private entrance road for the airport.

Due to site characteristics, it is proposed that a gravity sewage conveyance system will be an efficient system to convey the effluent to the package treatment plant. Currently the modelling indicates that the size of the system will be required to handle a demand of 36 EP's (Equivalent Person).

4.1.3 OPW Bulk Earthworks

The existing site is currently located on a natural ridge line. The proposed development will be constructed in fill.

The design of preparatory earthworks to support the Airport has also been undertaken and included within this application material. This material relates to the Bulk Earthworks component of the proposed OPW permits. As the area is currently located on a natural ridgeline, it is to be constructed in fill. In order to incorporate the proposed stormwater catchment strategy the earthworks will be split up such that a portion of the site falls towards the north-west and the remaining towards the south-east.

4.1.4 OPW Vegetation Clearing

The required vegetation clearing to facilitate the sitting and construction of the Airport has also been included within this application material. This material relates to the Vegetation Clearing component of the proposed OPW permits. The basis for this clearance has drawn from the extensive work prepared as part of the SEIS submission in relation to the identification and discussion of existing regional ecosystems.

In terms of the chosen location for the Airport, current vegetation within and around this area did not identify any mapped regional ecosystems as occurring. Importantly, as part of the broader SEIS submission for the Project detailed re-categorisation and revised mapping has been undertaken that addresses, amongst other elements, clearing associated with the proposed Airport. This revised mapping was in the form of a Property Map of Assessable Vegetation and in the case of the Airport, it confirmed that there were no regional ecosystems within close proximity to the airport.

This vegetation clearing application also includes the applicable information that should facilitate appropriate permits for clearing under the VMA to be granted as well as that under the SPA.

4.2 Airport Operational Details

When operational, the airport has been designed and planned to accommodate aircraft with a maximum capacity of 150 persons. Flights are programmed to occur on Tuesdays, Wednesdays and Sundays.

Currently it is planned that during the early and mid phases of the mine, between 10 and 13 flights per week will occur. In the latter part of the mines operation (post 2060), flights are generally expected to decline from eight (8) to one (1) flight per week. When operating at maximum capacity (in the early-mid phases) it is envisaged that up to 701 flights per annum could be processed through the airport.

Importantly, all aspects in relation to certification and aeronautical industry compliance of the proposed airport fall outside the scope of this current material change of use and operational works application and are to be dealt with separately.

4.3 Summary of Supporting Specialist Reports / Documentation

In support of this application material, the following specialist reports have been commissioned and accompany this planning assessment report:

Table 6: Relevant reporting

Category	Consultant	Title of Documents	Location
Plans and Drawings	Gassman Development Perspectives & Adani Mining Pty Ltd	Site Analysis Plan Staging Plan Proposal Plan	Appendix A
Code Assessment	Gassman Development Perspectives	Code Assessment	Appendix B
OPW Vegetation Clearing	Gassman Development Perspectives	Vegetation Management Plan	Appendix C
OPW Bulk Earthworks	Hyder Consulting	Bulk Earthworks Drawings	Appendix D
ERA Sewage Treatment	Gassman Development Perspectives	Site Based Management Plan	Appendix E
Preliminary Servicing	Hyder Consulting	Preliminary Servicing Reporting	Appendix F
Stormwater Management	Hyder Consulting	Site Based Stormwater Management Plan	Appendix G
Statutory Forms	Gassman Development Perspectives	Statutory Application Forms	Appendix H
SARA Code	Gassman Development Perspectives	SARA Code Responses	Appendix I

5.0 State Government Planning

Assessment



Figure 5: Hierarchy of Assessment – State, Source: GDP, 2013

State planning policy sits effectively at the top of the assessment hierarchy in relation to development proposals in Queensland, providing broad overarching policy that informs each of the subsequent lower levels of assessment. The following sections of this report provide discussion and comment on how the proposed development aligns with relevant state planning policies and provisions.

The application material prepared requests development permits for:

- Material Change of Use Permit: Airport and ERA – Sewage Treatment; and
- Operation Works: Vegetation Clearing and Bulk Earthworks.

As this application material is to form part of the broader SEIS submission for the project, discussion in relation to both the State Development and Public Works Act 1971 (SDPWO Act), the Sustainable Planning Act 2009 (SPA), the Environmental Protection Act 1994 (EPA) and the Vegetation Management Act 1999 (VMA) are required. In essence the content and form of the application material is guided by the SPA, EPA and VMA requirements, with the SDPWO Act enabling early consideration of the applications. This early consideration then flows onto an

accelerated SPA assessment process once a SPA development application is lodged with the assessing authority (post EIS determination under the SDPWO Act).

This application material has been prepared and submitted as part of the SEIS material in compliance with this ability for accelerated SPA assessment processes to be obtained.

5.1 State Development and Public Works Act 1971

The broader mine and rail project (the Project) has been declared a 'significant project' under the SDPWO Act and is currently undergoing the EIS assessment process by the Coordinator General. As this process is currently underway, alternative SPA assessment processes are applied in relation to aspects of a development requiring a SPA development permit.

Part 4 Section 37 of the SDPWO Act specifically deals with the forms of development where the application material is provided to the Coordinator General as part of the EIS/SEIS material. Importantly, accelerated forms of SPA processing and assessment stages are available due to the removal of the Information and Referral Stage, the Notification Stage and referral to any SPA referral agencies.

5.2 Sustainable Planning Act 2009

SPA provides guidance in relation to the types of approvals required and the applicable assessment considerations. Specifically, a Material Change of Use (MCU) is defined as a number of different aspects, including that of the:

- the start of a new use of the premises; or

Operational Work (OPW) includes a number of various activities, including those in relation to:

- excavating or filling that materially affects premises or their use; and
- clearing vegetation, including vegetation to which the Vegetation Management Act applies.

The airport use complies with this MCU aspect definition. The vegetation clearing and bulk earthworks proposed comply with the OPW aspect definition.

Part 5 Division 2 Section 314 of the SPA specifies those matters that must be addressed by the assessment manager as part of any **Impact Assessable** development application. Reference items raised within this sections are summarised as follows:

- Relevant State planning regulatory provisions;
- Relevant regional plans;
- Applicable codes under IDAS or the SPA 2009;
- Relevant State planning policies;
- Any codes within relevant structure plans, master plans, temporary local planning instruments, preliminary approvals or planning schemes;
- Any development approval for, or lawful use of, premises the subject of the application or adjacent premises; and
- Any referral agency's response.

5.3 Environmental Protection Act 1994

The EPA outlines a number of operations that require an MCU permit as defined by the SPA. These operations are referred to as an Environmentally Relevant Activity (ERA) and include:

- an activity prescribed under section 19 as an environmentally relevant activity.

Part 3 Subdivision 4 Section 19 activities include those in relation to on-site effluent disposal. The on-site effluent disposal proposed as part of the airport use complies with this MCU-ERA aspect definition.

Part 2 Division 3 Section 125 of the EPA specifies those matters that must be addressed as part of an Environmentally Relevant Activity application. These include that of accurate descriptions of site activities and details of site management plans and likely impacts.

5.4 Vegetation Management Act 1999

The VMA regulates the clearing of native vegetation within Queensland and provides guidance as to what clearing can occur and the manner in which it can be cleared. It regulates primarily mapped remnant vegetation and high value regrowth vegetation. Any clearing under the VMA linked with a development application is generally undertaken in accordance with the SPA application and processes and the granting of relevant development permits.

Whilst there are some exemptions from requiring the appropriate permits to be obtained, all other clearing can only be performed under relevant permits. Any such applications are assessed against regional vegetation management codes, with there currently being four (4) codes for assessing applications throughout different areas within Queensland. These codes include performance requirements for each application type/relevant purpose and for any permit to be given, the performance requirements for the purpose applied for must be met.

5.5 Public Advertising

This application for the airport and supporting ERA and OPW aspects, if currently lodged with Isaac Regional Council under the requirements of the Belyando Planning Scheme, would be Impact Assessable. Notwithstanding, as this application material forms part of the SEIS submission for the Project (which is to be publicly advertised), if an application is lodged post EIS determination, no additional public advertising measures are required.

5.6 State Planning Policies

The table below lists each State Planning Policy (SPP) with comments on their respective relevance to this application.

Table 7: Relevant SPPs

State Planning Policies	Relevance
SPP 1/92: Development and the Conservation of Agricultural Land	Applicable –the subject site has traditionally been associated with grazing related agricultural operations and as such, any departure from this historical use requires careful consideration. On a project wide (macro scale), the land to be utilised for the mine and off-site infrastructure items is being considered as a whole and is to be dealt with on a project wide scale. This consideration includes aspects of varied land uses and applicable offsets/integration policies. It is also noted that as part of lease discussions with the State Government, similar considerations are also relevant. On a proposed use micro scale, the use of the identified location for an airport use represents less than 0.2% of the existing land mass of the Moray Downs property. In this regard, it is not considered that this airport use will compromise or degrade the remaining agricultural use of the site and surrounds.
SPP 1/02: Development in the Vicinity of Certain Airports and Aviation Facilities	Not Applicable – whilst the proposed development is for an airport use, the chosen location and larger subject site is not located within close proximity to any of the identified airports by this SPP.
SPP 2/02: Planning and Managing Development Involving Acid Sulfate Soils	Not Applicable – the identified location of the airport is not highlighted as having the potential to contain acid sulphate soils.

SPP 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide	Applicable – Whilst the chosen location is not highlighted within a natural hazard management area, an airport use is a relevant development defined within this policy. This identification requires assessment against outcome 3 of the SPP and is relevant to the consideration and determination of this application. Outcome 3 states ‘Wherever practicable, community infrastructure to which this SPP applies is located and designed to function effectively during and immediately after natural hazard events commensurate with a specified level of risk’. Sufficient design measures have been incorporated into the airport design such that sufficient flood immunity will be achieved. Importantly, the airport is seen as a key portal to the site during flood events due to the limited immunity of the existing localised road network. Additionally, the chosen location for the airport is not considered to be at risk from landslide and appropriate measures can be incorporated/conditioned to ensure bushfire hazard measures are adopted.
SPP 1/07 Housing and Residential Development	Not Applicable – the applicant is not a local government.
SPP 2/07: Protection of Extractive Resources	Not Applicable – the subject site has not been identified as being subject to a Key Resource Area designation. Notwithstanding this point, the proposed development is directly related to a mining operation and therefore complements the intent of this policy provision.
SPP 2/10: South East Queensland Koala Conservation	Not Applicable – the subject lot has not been identified as being subject to koala conservation policies for south-east Queensland.
SPP 3/10: Acceleration of Compliance Assessment	Not Applicable – accelerated compliance assessment is not sought as part of this application.

SPP 4/10 Healthy Waters	Applicable – Development is to be constructed so that it complies with the provisions of this policy. Please refer to the Stormwater Management Plan submitted in support of this application for further detail in this regard. Detailed supporting engineering reporting has been prepared to support the proposed airport use. This reporting includes outlining the intended measures to be incorporated on-site to ensure that stormwater is appropriately conveyed, captured and treated on-site.
SPP 5/10 Air, Noise and Hazardous Materials	Not Applicable – the site is not located within a designated management area under the SPP and the proposal is not defined within the list of sensitive land uses.
SPP 4/11: Protecting Wetlands of High Ecological Significant in Great Barrier Reef Catchments	Not Applicable – the subject site is not identified as a wetland protection area as contained within the Great Barrier Reef Catchments.
SPP 1/12: Protection of Queensland's Strategic Cropping Land	Not Applicable – the subject site is not identified as being strategic cropping land or as potential strategic cropping land.

Temporary SPP 2/12 Planning for Prosperity	Applicable – this temporary Policy was introduced to assist in supporting economic growth within QLD and reducing red tape. It enables policy and decision makers to utilise additional ‘tools’ to overcome conflicting issues based on the State’s economic growth. In terms of development assessment, there are a number of competing outcomes that can be considered to balance the appropriateness of development. One such outcome is <i>“mineral and extractive resources development which can be shown to be complementary to an area’s primary intended land use”</i>. This application relates to key off-site infrastructure items required to support extractive mining activities. Whilst the current intent of the area is generally that of rural, the broader EIS assessment may facilitate a variation to this use to include extractive mining activities. It is also noted that the location and operation of similar extractive mining operations generally occurs within rural areas. In this regard, it is considered that this proposal will advance the purpose of this SPP through its’ direct relationship to the planned extractive mining operations.
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Draft State Planning Policy April 2013

Applicable – This draft Policy was released for consultation in April this year and is aimed at expressing state interests in a complete and comprehensive manner. It is hoped that this SPP will lead to greater certainty, streamlined assessment and improved planning outcomes for the wider community. This SPP applies in a number of circumstances, including those in relation to making or amending planning schemes and assessment of development applications.

Five (5) themes are identified within this SPP which are the basis for the formulation of 18 state interests. Of particular relevance to this application is the state interest related to 'mining and extractive resources'. Whilst this state interest acknowledges that SPA does not regulate mining activities, it does note that it is *"important to maximise opportunities for coexistence between resource extraction and other development types where possible"*. This current application relates to core off-site infrastructure items that are intended to be appropriately located and operated 'side by side' with the planned extractive mining operation.

In this regard, it is considered that this proposal will advance the purpose of this SPP through its' direct relationship to the planned extractive mining operations.

5.7 State Planning Regulatory Provisions

The table below lists each State Planning Regulatory Provisions (SPRP) with comments on their respective relevance to this application.

Table 8: Relevant SPRPs

State Regulatory Provisions	Relevance
State Planning Regulatory Provisions	
South East Queensland Regional Plan 2009-2031 (SEQRP)	Not Applicable – the subject site is not located within the SEQRP 2009-2031.
South East Queensland Koala Conservation State Planning Regulatory Provisions	Not Applicable – analysis of koala habitat mapping found that the application did not impact on any designated area the south-east Queensland.
SPRP (Adult Stores)	Not Applicable – the proposal does not involve an adult store.
Off Road Motorcycling Facility on State Owned Land at Wyaralong	Not Applicable – the subject site is not located at Wyaralong.
State Planning Regulatory Provision (adopted charges)	Applicable: Due to the unique nature of this application and land tenure, matters in relation to infrastructure charges are considered likely to be subject to detailed and separate agreements outside the scope of any development approval.
Yeerongpilly transit Oriented Development State Planning Regulatory Provision	Not Applicable – the subject site is not located in the Yeerongpilly Area.
Coastal Protection State Planning Regulatory Provision	Not Applicable – the proposed development is not located in the coastal zone or coastal management district.
Mackay Isaac & Whitsunday State Planning Regulatory Provision	Not Applicable – these provisions were repealed on the 11th July 2012.

5.8 State Referral Triggers

The State Assessment and Referral Agency (SARA) was established on the 1st July 2013 and is the single assessment manager or referral agency for all development applications where the state has a jurisdiction. Prior to SARA being established, individual referrals had to be provided to any applicable state agency on a case by case basis.

Schedule 7 of the Sustainable Planning Regulation 2009 prescribes the applicable state agency referral triggers, with there being different triggers in relation to different 'types' of development. Due to the nature of this application and the proposed airport, tables two (2) and three (3) of the regulation apply as they relate to 'other development made assessable' and 'development made assessable under a planning scheme'. If any of the triggers within these tables are triggered, then referral to SARA of the application material would generally be required. The following sections provide an outline of the assessment undertaken against both these tables.

5.8.1 Other Development Referral Triggers

The below table provides a summary of assessment of the application material against the triggers outlined in 'Table 2 – Other development made assessable under schedule 3' of the Sustainable Planning Regulation 2009:

Table 9: Other Development Referral Triggers

Part	Area	Test	Trigger Applies	Referral Type
1	Environmentally relevant activity	MCU for an ERA	Yes	DEHP as a Concurrence Agency
2	State-controlled road	ROL within proximity to State-controlled road	No	N/A
3	State-controlled road	OPW within proximity to State-controlled road	No	N/A
4	Clearing vegetation	ROL with associated native vegetation clearing	No	N/A
5	Clearing vegetation	OPW with associated native vegetation clearing	Yes	DNRM as a Concurrence Agency
6	Strategic port land	MCU on strategic port land	No	N/A
7	Airports	MCU on certain airport	No	N/A

		land		
7A	Airports	ROL on certain airport land	No	N/A
8	Major hazard facilities	MCU for major hazard facility	No	N/A
9	Taking or interfering with water	OPW for taking or interfering with water	No	N/A
10	Interfering with water and embankment areas	OPW for taking or interfering with water	No	N/A
11	Particular dams	OPA for construction of a dam	No	N/A
12	Removal of quarry material	Development for removal of quarry material	No	N/A
13	Tidal works	OPW for certain tidal or related works	No	N/A
14	Tidal works	ROL within CMD or for canal construction	No	N/A
15	Tidal works	OPW for certain tidal or related works	No	N/A
15A	Tidal works	OPW for certain tidal work	No	N/A
15B	Tidal works	OPW for certain tidal works within Gold Coast	No	N/A
16	Tidal works	Certain development within the limits of a port	No	N/A
17	Tidal works	Other development within limits of a port	No	N/A
18	Tidal works	OPW for marina works	No	N/A
19	Queensland heritage place	Development on a heritage place	No	N/A
20	Declared catchment areas	ROL in a declared catchment area	No	N/A
21	Electricity	ROL subject to electricity	No	N/A

	infrastructure	easement or substation		
22	Contaminated land	ROL on contaminated land	No	N/A
23	Contaminated land	MCU on contaminated land	No	N/A
25	Adjoining a fish habitat area	Building work in a declared fish habitat area	No	N/A
26	Adjoining a fish habitat area	OPW in a declared fish habitat area	No	N/A
27	Adjoining a fish habitat area	Development adjoining a declared fish habitat area	No	N/A
28	Certain aquaculture	MCU for aquaculture	No	N/A
29	Waterway barrier works	OPW for waterway barrier works	No	N/A
30	Marine plants	OPW for removal, destruction or damage of marine plants	No	N/A
31	Marine plants	ROL that involves removal, destruction or damage of marine plants	No	N/A
32	Marine plants	MCU that involves removal, destruction or damage of marine plants	No	N/A
33	Public passenger transport	Certain ROL close to a public passenger corridor	No	N/A
33A	Public passenger transport	Other ROL close to a public passenger corridor	No	N/A
34	Railways	ROL close to railway land	No	N/A
34A	State-controlled transport tunnels	ROL close to State-controlled transport tunnel	No	N/A
35	Oil and gas infrastructure	ROL subject to oil/gas easement	No	N/A
39	Regional plans	Certain ROL with the	No	N/A

		SEQ Region		
41	Wild river areas	MCU for certain activities within a wild river area	No	N/A
42	Wild river areas	OPW for certain activities within a wild river areas	No	N/A
43A	Wetland	ROL in a wetland protection area	No	N/A
43B	Wetland	OPW in a wetland protection area	No	N/A
47	Distributor-retailers area	ROL within a distributor-general's geographic area	No	N/A

5.8.2 Assessable Development under Planning Scheme Referral Triggers

The below table provides a summary of assessment of the application material against the triggers outlined in 'Table 3 – Development made assessable under a planning scheme' of the Sustainable Planning Regulation 2009:

Table 10: Assessable Development under a Planning Scheme Referral Triggers

Part	Area	Test	Trigger Applies	Referral Type
1	State-controlled road	MCU within proximity to State-controlled road	No	N/A
1A	State-controlled road	OPW within proximity to State-controlled road	No	N/A
2	State transport infrastructure	Development of a certain type and scale	Yes	TMR as a concurrence agency
4	Declared catchment areas	Certain development within a declared catchment are	No	N/A
5	Coastal management district	MCU within a coastal management district	No	N/A
6	Community	Development on land	No	N/A

	infrastructure	designated for community infrastructure		
7	Electricity infrastructure	MCU on a lot subject to electricity easement or substation	No	N/A
8	Electricity infrastructure	MCU within proximity to a substation site	No	N/A
9	Electricity infrastructure	OPW on a lot subject to an electricity easement or substation	No	N/A
10	Clearing vegetation	MCU for 242 on a lot containing native vegetation or involves clearing native vegetation	Yes	DNRM as a Concurrence Agency
11	Contaminated land	MCU within a management area for unexploded ordinance	No	N/A
12	Regional plans	Certain MCU with the SEQ Region	No	N/A
14	Public passenger transport	Certain MCU close to public passenger transport corridor	No	N/A
14A	Public passenger transport	Other MCU close to public passenger transport facility	No	N/A
15	Airports	MCU on certain airport land	No	N/A
15A	Railways	MCU close to a railway or future railway land	No	N/A
15B	Railways	OPW close to a railway or future railway land	No	N/A
15C	State-controlled transport tunnels	MCU close to a state-controlled transport tunnel	No	N/A
16	Oil and gas infrastructure	MCU subject to oil/gas easement	No	N/A

17	Oil and gas infrastructure	OPW subject to oil/gas easement	No	N/A
21A	Land in or near a wetland	MCU including OPW in a wetland protection area	No	N/A
25	Marine plants	MCU that involves removal, destruction or damage of marine plants	No	N/A
26	Distributor-retailers area	Development within a distributor-general's geographic area	No	N/A
27	Strategic cropping land	MCU wholly or partly on SCL	No	N/A
28	Strategic cropping land	ROL of a lot containing SCL	No	N/A
29	Strategic cropping land	MCU in a protection area for SCL	No	N/A

5.9 Consolidated List of State Referrals

This application for the airport and supporting ERA and OPW aspects, if currently lodged with Isaac Regional Council would require referral to SARA based on the above triggers that require referral to DEHP, DNRM and TMR as concurrence agencies. Notwithstanding, as this application material forms part of the SEIS submission for the Project, if an application is lodged post EIS determination, no subsequent referral of the application material to State agencies is required.

6.0 Regional Planning Assessment

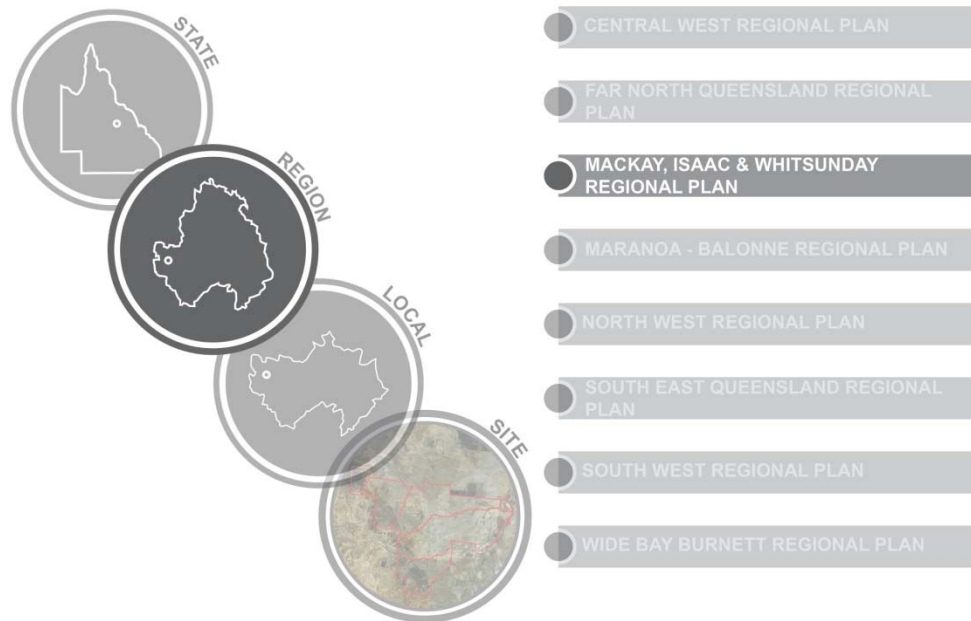


Figure 6: Hierarchy of assessment – Region, Source: GDP, 2013

Regional planning policy is positioned below state planning policy as effectively the second tier on the hierarchy of planning policy in relation to development proposals in Queensland. Regional planning policy provides region specific guidance in relation to the themes and issues that effect the region as a whole, it also provides an opportunity for the region and its constituent local authorities to work together to achieve common goals.

In this particular instance, the Mackay, Isaac and Whitsunday Regional Plan (MIW Regional Plan) applies to the subject site. Generally speaking, for applications to be favourably considered they need to be consistent and complimentary to the intent and purpose of any applicable regional plans.

6.1 Mackay, Isaac and Whitsunday Regional Plan

The MIW Regional Plan seeks to establish a vision and framework for the sustainable future of the Mackay, Isaac and Whitsunday Region from present day up until the year 2031. Given the timeframes and size of the region, the document effectively provides strategic objectives to address future challenges and capitalise on opportunities.

The basic structure of the plan includes a 'Regional Framework' that provides location specific guidance; 'Regional Narratives' to provide more detailed within specific areas; and 'Desired Regional Outcomes' that provide region wide policy objectives, finally a description of the core land use designations within the plan is provided to inform future development. The following sections assess the proposed development against the relevant sections.

6.1.1 Regional Framework

The Regional Vision for the MIW Regional Plan states:

“The Mackay, Isaac and Whitsunday region (the region) is a vibrant, progressive region where the values of the community and industry are respected and in balance with the natural environment. The region's natural assets and abundant resources will be responsibly managed for the benefit of residents, visitors and future generations. It achieves its potential with a range of industries, employment and learning opportunities for everyone. The region has a resilient and inclusive community that respects and offers diversity and choice, and where residents and visitors enjoy a healthy, active and safe lifestyle”.

Significantly the vision identifies the importance of resource management with the region and encourages its sustainable exploitation to the benefit of the region.

Natural resource management is defined as a core strategic direction within the plan, as its presence underpins the regions economy at present and represents a major element of potential future growth. Further, the plan states that future planning will also need to ensure opportunities for exploration and development of new resources are located appropriately in order to reinforce the sector within the region. Significantly the Transport related strategic direction identifies the impact of mine related traffic on local networks and states an 'organised transport option may improve safety and lessen the reliance on private motor vehicles'.

In this regard, the proposal is considered to promote the Regional Framework as it is for 'organised transport' relating to natural resource management.

6.1.2 Regional Narratives

Specific Regional Narratives have been prepared for the Isaac Regional Council area. These narratives acknowledge the presence of the coal reserves within the region and its contribution to the national economy. The narratives also reference the emerging proposals for future mine operations within the region and the preference for integrated infrastructure to encourage optimal outcomes. Significantly the exploration and exploitation of reserves within the Galilee Basin is identified as providing more growth opportunities within the region.

This proposal is considered to be generally consistent with these Regional Narratives as the airport use is to support exploration activities within the Galilee Basin. Whilst the airport is to be operated as a private airport, the reduction of transportation for staff movement utilising traditional established means (i.e. localised road network, Moranbah Airport) should alleviate any capacity constraints on such items and enable easier integration of alternate large operations.

6.1.3 Desired Regional Outcomes

The MIW Regional Plan lists a number of Desired Regional Outcomes (DROs) underpinned by principle, policy and program statements all of which are categorised by themes. There are 10 identified DROs, with these covering matters from sustainability; regional landscapes; urban form and transport. Some of the core DEOs that it is considered this proposal will assist in promoting include those in relation to natural resource management, strong economy and transport. An outline on some of the DEO policy provisions and discussion in relation to the proposed airport use is as follows:

‘4.1.3 Natural resource management, planning, investment, monitoring and reporting is coordinated to improve the quality and contribution of the resource to the region’.

Comment: The proposed development relates to an airport that will service the needs and requirements of an extractive resource. In this regard, the proposed development is a demonstration of how appropriate planning and investment is being brought forward as part of the natural resource management strategy for the operation.

4.3.3 The operation of extraction and processing activities does not compromise human health, current and future resource use opportunities, regional landscape values or ecosystem function and services, and must minimise its impact on primary production.

Comment: Whilst the proposed development does not directly relate to the operation of the mine, the development will service the needs and requirements of the mine operation. The proposed development has been designed to avoid detrimental impacts to human health, future resource opportunities, regional landscape values or ecosystem integrity.

6.1.4 Identify and facilitate outcomes that remove growth constraints and impediments to business to encourage new business and investment attraction.

Comment: The proposed development effectively reduces the isolation of an economic driver that will positively impact upon the regional economy and in this regard is compliant with this provision.

6.2.6 Attract new rail, port and aviation service providers that support and facilitate existing and proposed industry and provide new services in the region.

Comment: The proposed development will provide a new aviation facility within a relatively isolated part of the region and therefore complies with this provision of the plan.

10.1.4 Coordinate the planning, sequencing and location of infrastructure, industry and urban development.

Comment: The proposed development has been brought forward at this time to service the needs of the proposed mine operation, in this regard the planning, sequencing and location of the proposed development has been carefully considered and justified.

10.2.4 Appropriate end-of-trip facilities for active transport users are incorporated into developments that are likely to attract or generate significant numbers of trips.

Comment: The proposed development has been designed to ensure appropriate facilities are provided on site to cater for the operational requirements of the facility and its patrons.

10.2.8 Awareness of alternatives to private car travel is promoted.

Comment: The proposed development has been brought forward as a result of detailed analysis that assessed the operational requirements of the mine operation in addition to

the impact on the proposed labour force and the impact on the wider community resulting from extended commuting periods. Accordingly a transport strategy revolving around air transport as opposed to road travel has been proposed to which the proposed airport will obviously play a crucial role.

In this regard, the proposal is considered to promote a large number of the DEOs and derived DEO policies contained within the Regional Plan.

6.1.4 Implementation

Within the implementation provision of the Regional Plan, areas are divided into a number of land use categories. Whilst these categories are considered more generally related and linked to the repealed Regulatory Provisions, discussion against such themes is still considered warranted and necessary. Due to the sites remote location, it is located within the Regional Production and Rural Landscape Area as indicated below:

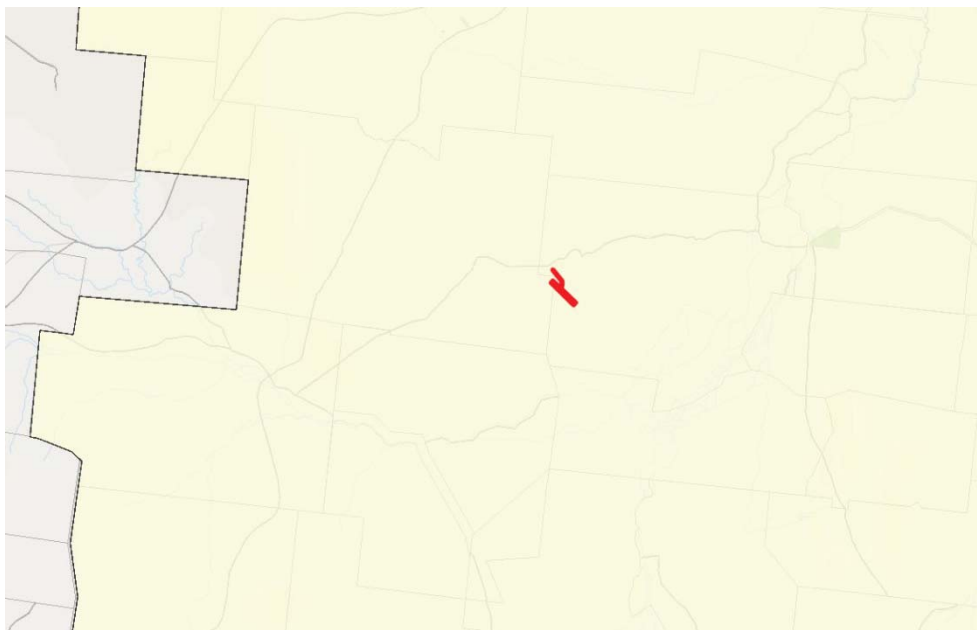


Figure 7: MIWRP Mapping, Source: Information Atlas 2013

Whilst the intent of this area is to generally identify and protect “*land with regional, rural production or other non-urban values*”, it is also noted that its purpose is not to impede significant activities including that of ‘mineral exploration’. In this regard, as this proposed airport is to support and compliment planned mineral exploration activities, it is considered to be compatible with the intent and purpose of the Regional Production and Rural Landscape Area.

7.0 Local Government Planning

Assessment

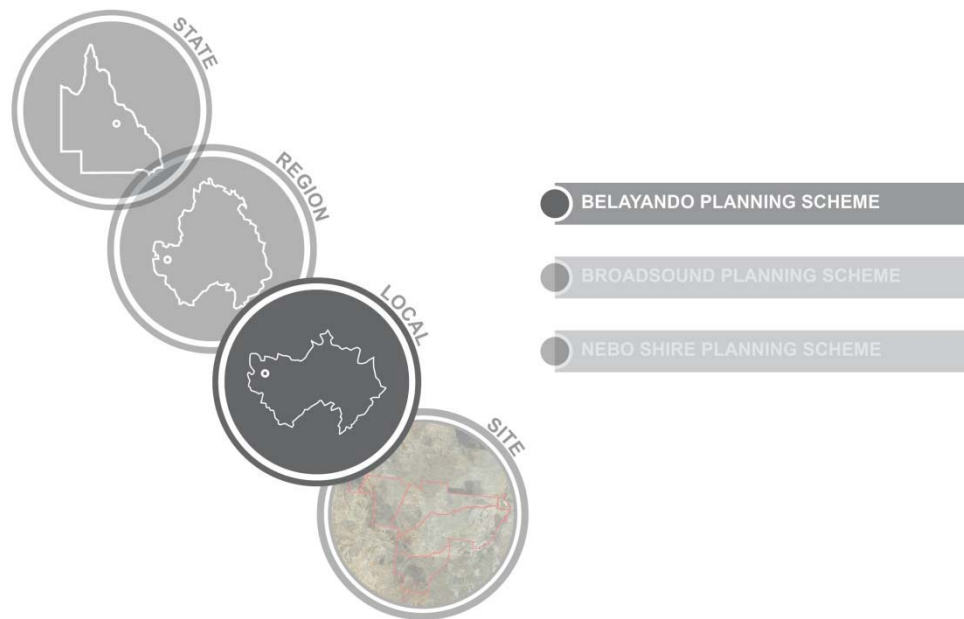


Figure 8: Hierarchy of assessment – Local, Source: GDP, 2013

As outlined earlier, the subject site is located within the jurisdictional boundaries of Isaac Regional Council. Currently there are three (3) separate planning schemes applicable within the Isaac Region, with these being that of the Belyando Scheme; Broadsound Planning Scheme and the Nebo Planning Scheme. The relevant planning scheme for the subject site is that of the Planning Scheme for Belyando Shire (the Planning Scheme).

7.1 Definition of Development

The core use proposed as part of this application is defined as “Airport” within the Planning Scheme. In this regard, airport is defined as follows:

“Airport” – means all site facilities and any building, installation and equipment used for the control of aircraft operations and any facility provided at such premises for the housing, servicing, maintenance and repair of aircraft, and for the assembly of passengers or goods.

The definitions in relation to the ERA and OPW aspects of the application are specified in alternate legislation as discussed in greater detailed previously in this report.

7.2 Zoning

The subject site is located within the ‘Rural’ Zone of the Planning Scheme. The zoning designation is illustrated in the following figure:

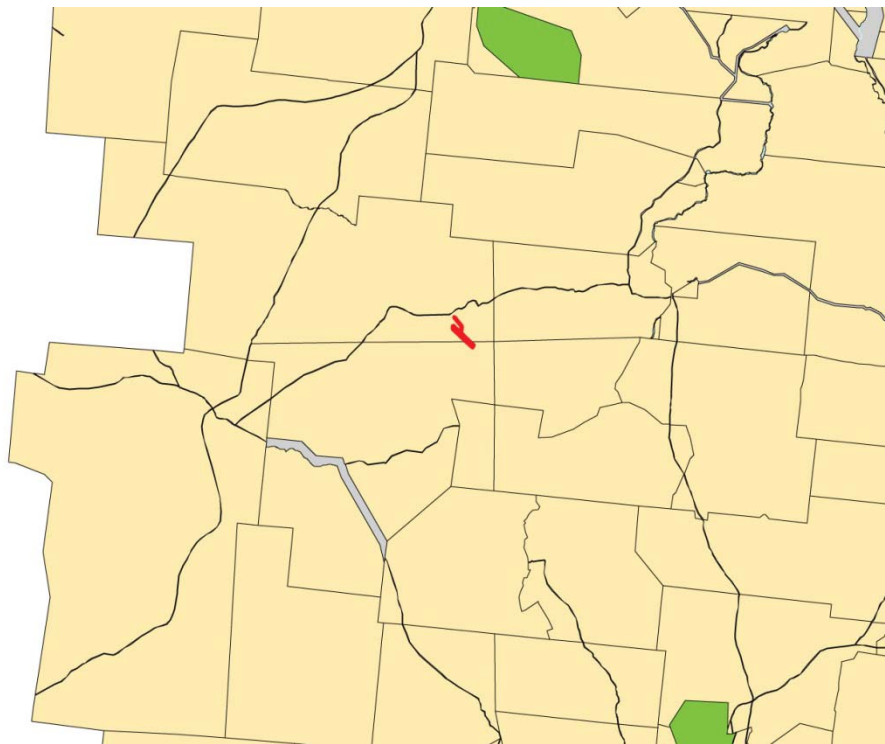


Figure 9: Planning Scheme Zone, Source: IRC Website, 2013

7.3 Level of Assessment

Within the Rural Zone, an airport use is defined as Impact Assessable by the Planning Scheme. An airport falls within the ‘All other “uses”’ category as outlined in the below table:

	Impact assessment otherwise	
All other “uses”	Impact assessment	

Figure 10: Planning Scheme Table of Assessment, Source: IRC Website, 2013

7.4 Desired Environmental Outcomes

The Planning Scheme provides a number of Desired Environmental Outcomes (DEOs) to guide development in a strategic manner. They are communicated in a DEO statement followed by a number of strategies for achieving the outcome. Due to the impact assessable nature of the proposed airport use, a detailed assessment against these DEOs and their strategies has been undertaken. Consistency with these DEOs will assist in determining the appropriateness of the proposed development and chosen location. The outcomes of this detailed assessment is discussed in greater detail below.

7.4.1 The Natural Environment and Cultural Heritage

Desired Environmental Outcome

In Belyando Shire, ecological systems, the natural environment (including natural features and unique habitats such as Peak Range National Park, Mazeppa National Park, Narrien Range National Park, Epping Forest National Park, Wilandspey Conservation Park, Doongmabulla Springs Important Wetland and the declared catchment), and items and places of cultural and heritage significance are protected such that biodiversity, cultural heritage values and existing or intended landscape character are maintained.

Strategies

- a) *Development is regulated to minimise any adverse impacts on air and water quality, to prevent land degradation, loss of unique habitat and biodiversity and to maintain the integrity of riparian areas, ridgelines and escarpments.*
- b) *Development is regulated to be compatible with the environmental, habitat, biodiversity and landscape values and historic significance of protected areas (including Peak Range National Park, Mazeppa National Park, Narrien Range National Park, Epping Forest National Park, Wilandspey Conservation Park, Doongmabulla Springs Important Wetland and the declared catchment) and areas, local items and places of cultural significance (including areas along water courses).*

Comment: The proposed development has been designed in a respectful manner to the key characteristics of the chosen location. Every effort has been made to ensure that no unreasonable adverse impacts are generated as a result of the development and mitigation techniques are employed where adverse impacts are identified. Importantly, the general appropriateness of the Project (which includes core off-site infrastructure items such as the

airport) is dealt with in greater detail on the complex array of vast material submitted as part of the EIS/SEIS process. This higher level consideration and justification includes reporting on environmental and cultural heritage matters and outlines any required ameliorative measures.

With this being said however, it is not considered that the proposed development will have any unreasonable impact on the air and water quality, will lead to land degradation and extensive analysis has been undertaken to ensure that habitats and the existing biodiversity characteristics are not unreasonably impacted upon. Further the chosen location is not in close proximity to any identified riparian area, ridgeline or escarpment. There are also no known identified protected areas or places of cultural significance nearby to the intended airport site.

Accordingly, the proposed development is considered to be consistent with the intent of 'Natural Environment and Local Heritage DEO', as it generally complies with the identified outcome and derived strategy statements.

7.4.2 Economic Development

Desired Environmental Outcome

The viability of the mining industry is protected, while the economy of Belyando Shire is diversified in a manner that supports the intended land use structure and character of the urban centres of Clermont and Moranbah and the rural parts of the Shire.

Activities that do not require a rural location are consolidated within the towns of Clermont and Moranbah, so that investment in the towns is maximised.

Moranbah's role as the primary service centre for the northern Bowen Basin mining industry is enhanced.

Town centres in each of the Shire's urban communities form vibrant and compact commercial and community cores. Industrial nodes in Clermont and Moranbah are consolidated.

Natural resources (including land, water and mineral resources) are used sustainably.

Strategies

- a) *The planning scheme reinforces the roles of Clermont and Moranbah as the principal places for administrative services, business, industry, retail, education and community services and transport services within the Shire.*
- b) *Sufficient and suitable areas are identified for urban development, and key transport infrastructure are identified and protected.*
- c) *Residential activities (with minor exceptions) are required to be located within the towns of Moranbah and Clermont.*

- d) Commercial activities are limited (with minor exceptions) to identified centres in the towns of Clermont and Moranbah.*
- e) Confidence in investment in the Shire's towns and in its major industries is maintained by identifying clear development intentions.*
- f) Urban and other sensitive forms of development are regulated to avoid or minimise potential conflicts with existing or future mining operations.*
- g) Productive rural land, rural industries and unique natural features (including mineral and extractive resources and tourist resources such as national parks, conservation parks and wetlands) are protected to preserve their continued economic potential and viability.*
- h) Industrial activities are directed to identifiable industrial nodes in the towns of Moranbah and Clermont.*

Comment: The proposed development is consistent with the Economic Development DEO as it seeks to provide a core facility associated with a significant mine operation that will provide a significant contribution to the regional and state economy.

The proposed development seeks to reduce the isolation of the subject site by providing for aviation facilities on site. In this regard, the role of Clermont or Moranbah will not be challenged as the principal locations for commerce and administration. It is envisaged the centre of Clermont will retain its role as the service centre for the region.

The proposed development will provide improved access conditions for what is currently a relatively isolated location and in this regard complies with providing sufficient and suitable areas for key transport infrastructure.

The proposed development does not incorporate residential development.

The proposed development does not relate to commercial activities as it is for a private airport.

The proposed aviation facilities have been respectfully located in terms of surrounding land uses and the proposed mining operation to ensure that in the first instance adverse impacts are minimised and secondly the resource extraction can proceed sustainably.

The proposed development does not relate to industrial activities.

Accordingly, the proposed development is considered to be consistent with the intent of 'Economic Development DEO', as it generally complies with the identified outcome and derived strategy statements.

7.4.3 Community Wellbeing

Desired Environmental Outcome

Moranbah and Clermont provide a wide range of government and community services and employment opportunities. Moranbah continues to have a significant role as the primary service centre for the northern Bowen Basin mining industry. The towns of Moranbah and Clermont accommodate strong, connected and vibrant communities, well supported by recreational and other community facilities, highly accessible by walking and cycling. Town centres provide a clear community focal point. Moranbah and Clermont are characterised by a strong and growing permanent resident population. A wide range of affordable housing types is available and all housing is designed to contribute to the quality of the urban environment. Dwelling units providing for permanent accommodation are predominant, with a significantly smaller proportion of other forms of accommodation intended for temporary residents.

The rural amenity and productive capacity of other parts of the Shire is maintained.

Strategies

- a) *The planning scheme seeks to ensure that people are connected to public spaces (including recreational areas) and community services through an appropriate land use structure and the provision of infrastructure within the towns of Clermont and Moranbah.*
- b) *Increased opportunities are created for a larger proportion of the mining (and related) workforce and their families to permanently reside in the Shire's towns through:*
 - i. *the designation of sufficient urban land to accommodate expected population growth;*
 - ii. *the encouragement of medium density, small lot and other forms of permanent housing to increase housing choices available within the Shire's towns; and*
 - iii. *limitations on the size of accommodation facilities for non resident workers.*
- c) *The planning scheme seeks to ensure all residential activities (with minor exceptions) are located within the towns of Clermont and Moranbah.*
- d) *All forms of "residential activities" (including accommodation intended for visitors and temporary residents) are required to be designed to integrate with the surrounding urban environment and be of a high quality urban design.*
- e) *Development is regulated to protect the health and safety of people.*

- f) (f) Infrastructure reflects community expectations and needs, meets appropriate engineering and environmental standards and is provided in an orderly and logical sequence to ensure cost effectiveness.*
- g) Rural communities are protected from incompatible forms of development, and rural residential development is not supported by the planning scheme.*

Comment: The proposed development is consistent with the Community Wellbeing DEO as it seeks to provide crucial infrastructure for a rural community related to a significant Mine Operation. As the proposal relates to an aviation facility Item (f) is particularly relevant to the proposal, as it relates to the timing of significant infrastructure. As discussed previously the proposed aviation facilities are part of a much wider strategy that seeks to establish a significant mining operation, in this regard it is considered that the proposed facility is crucial in the staging strategy of the proposed operation in order to reduce isolation to both labour markets and key materials.

7.4.4 DEO Summary

The DEOs contained within the Planning Scheme seek to provide a strategic framework to guide the implementation of planning policies and subsequently development. Given the strategic level of assessment associated with the proposed development an assessment against both the DEOs and relevant policy statements was undertaken. This assessment demonstrated how the proposed aviation facility is generally consistent with the intent of the DEOs and in many ways promotes the achievement of several strategy statements.

7.5 Planning Scheme Overlays

The following section captures the overlays contained within the Planning Scheme and their relevance to the proposed application.

7.5.1 Land Characteristics Map – Features Map

The subject site is not identified specifically on the 'Land Characteristics Map', the only relevant features identified in relatively close proximity to the chosen location would be watercourses. Consideration and mitigation/management from any watercourses has been dealt with specifically in the engineering reporting that has been submitted as part of this proposal.

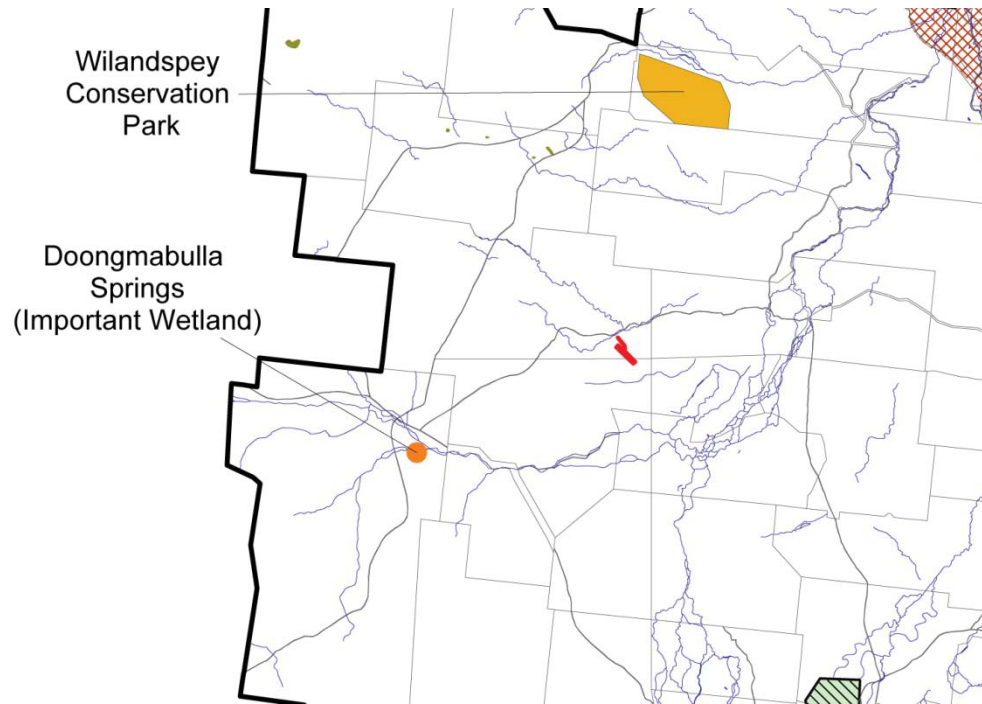


Figure 11: Land Characteristics Map - Key Features. Source: IRC Website, 2013

7.5.2 Land Characteristics Map – Good Quality Agricultural Land

The entire subject site has been identified as containing portions of Class B or Class A Agricultural Land. It is also acknowledged that the subject site has traditionally been utilised for land extensive broad hectare grazing practices.

Importantly, the chosen location represents less than 0.2% of the area of the current property (Moray Downs) and in this regard is not considered likely to have any meaningful impact on the agricultural (or other) use of the property as a whole.

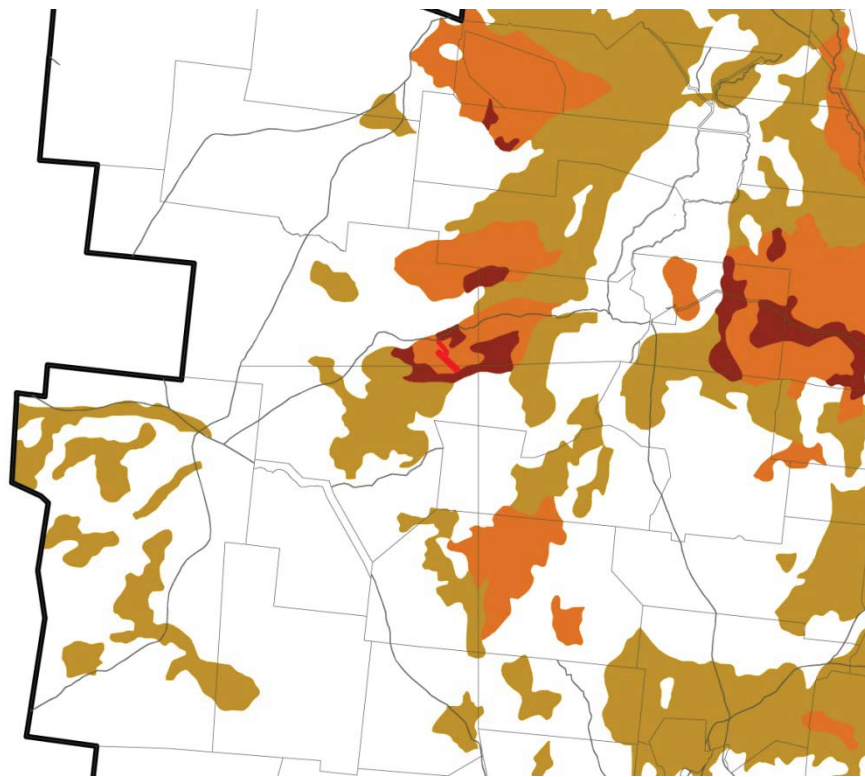


Figure 12: Land Characteristics Map - Good Quality Agricultural Land. Source: IRC Website, 2013

7.6 Zone Code

7.6.1 Rural Zone Intent

The 'Rural Zone' of the Planning Scheme seeks to provide the framework for development assessment in old Belyando Shire. The purpose of the code is defined under four key objectives, each one is detailed below in addition to an assessment of how this proposal will impact on the objective.

- 1) *The Rural "Zone" retains its viability as an area of primary production and natural resource use, including mining.*

Comment: The proposed airport is being constructed as part of a larger strategy for the operation of a large scale mining operation and in this regard is consistent with the intent of this provision.

- 2) *"Rural activities" and mining are appropriately located within the Rural "Zone" and are not prejudiced by inappropriate development.*

Comment: The proposed airport has been sited on the basis of detailed studies seeking the appropriate location for such infrastructure. In this regard, it is considered that the proposed location is the optimal location in terms of the existing context and proposed future operations for such infrastructure and will efficiently and sustainably contribute to the operation of the mine. Further it is considered that the proposed location will not adversely impact upon existing rural activities.

- 3) *Within the Rural "Zone", "development":*
 - a. *maintains the environment, including soil, air and water, compatible with healthy natural systems and ensures public health and safety;*
 - b. *protects good quality agricultural land (GQAL) from fragmentation, alienation or encroachment of incompatible land "uses" in accordance with State Planning Policy 1/92 – Development and Conservation of Agricultural Land;*
 - c. *is located, designed and operated in a manner that protects and enhances the predominant rural scale, intensity, form and character;*
 - d. *maintains the rural amenity;*
 - e. *does not prejudice or impact adversely on other "uses", particularly "sensitive land uses", including those within other "zones";*
 - f. *does not prejudice or unduly impact on mineral resources or their extraction;*

- g. has an appropriately designed access to the road network, and traffic generated by the development does not impact adversely on the local road network;*
- h. does not adversely impact on areas and sites of conservation importance, including cultural and high landscape values;*
- i. is located and designed in ways that minimise the need for flood and landslide mitigation, and to protect people and premises from such natural events;*
- j. has water supply, stormwater disposal, sustainable effluent and waste disposal and power, to appropriate standards, adequate for the “use”; and*
- k. does not impact adversely on infrastructure.*

Comment: The proposed development has been designed to integrate and respect the existing context of the receiving environment.

The proposed design has been informed by the environmental features of the subject site in order to ensure no unreasonable impacts are experienced. Due to the nature of the proposed development, being aviation, public health and safety has been a crucial element of the proposed design ensuring the necessary standards are incorporated within the final design iteration.

Whilst the application acknowledges the designation of the subject lands within the ‘Good Quality Agricultural Land’ of the Planning Scheme, the chosen location represents less than a 0.2% area of the current property (Moray Downs) and in this regard is not considered likely to have any meaningful impact on the agricultural (or other) use of the property as a whole.

The proposed airport by virtue of its nature will be operated in isolation from surrounding land uses, which is consistent with rural development. Further, the operational requirements of the proposal require large areas with sporadic activity, with operational facilities such as the airport terminal provided in a cluster of structures not unlike an agricultural activity.

The proposed development is part of a wider strategy to develop a mining operation of significant size and scope, in this regard the proposal is helping to facilitate sustainable resource extraction.

The proposed development will be accessed by a road linking the development to the Moray Carmichael Road on a north south alignment. It is envisaged that the Moray Carmichael will provide the necessary capacity to cater for the proposed traffic generated as result of the proposed development.

The subject site is not located on or adjacent to a site of cultural or high landscape value.

The proposed development has been designed to be above any flood level in the local area. Further, the proposed airport will provide a valuable emergency access point in times of flood should it be needed.

The proposed development has been designed in appropriate manner in terms of stormwater and servicing as demonstrated by the reports submitted in support of this proposal.

- 4) *Within the Rural "Zone", the following are appropriate "uses":*
- a. *"agriculture" and "grazing";*
 - b. *"intensive animal industries" and "extractive industries", where they are located and operated so as to ensure no unacceptable detrimental impact on surrounding "uses" or on the environment;*
 - c. *limited industrial "uses", where it can be demonstrated those "uses" are associated with rural production or natural resource use and cannot reasonably be established in the Industrial "Zone";*
 - d. *"bed and breakfast premises" and "home business" where they are of a small scale and are compatible with surrounding "uses";*
 - e. *"caravan or relocatable home park" for the purposes of tourist accommodation where it is: of a small scale; compatible with the amenity and character of surrounding uses; and directly and primarily associated with rural production, the natural environment or cultural resources in the surrounding area; and*
 - f. *"caravan or relocatable home park" or "accommodation building" for the purposes of accommodating workers, where the use is: directly and primarily associated with rural production or a natural resource related industry on the same site or on an immediately adjoining site; compatible with the amenity and character of the surrounding uses; intended to be established only for a defined period; and cannot reasonably be located in the Urban "Zone".*

Comment: The proposed use is considered to be appropriate within the 'Rural Zone' as it will contribute to the viability of a significant resource extraction project. As points 4c and 4f cater for the needs of natural resource related industry, this proposed development is considered an extension of this intent in that it will effectively reduce the isolation of the natural resource and therefore improve the feasibility of extracting the resource in a sustainable manner.

7.7 Applicable Assessment Provisions

As the proposed development is defined as Impact Assessable under the Planning Scheme, it is also required to demonstrate compliance (where applicable) with the relevant codes contained within the Planning Scheme. In relation to this specific proposal the 'Rural Zone' Code is the only code that has been triggered. The outcomes of the assessment against this Code is discussed in detail below.

7.7.1 Rural Zone Code

As outlined above, the subject site is located within the 'Rural Zone' and therefore the 'Rural Zone' code has been triggered for assessment. Accordingly an assessment has been undertaken of the proposed development against the 'Rural Zone' Code.

Whilst the proposal is considered to be generally in accord with the outcomes and purpose of the relevant code, the following key responses are considered significant to the assessment of this proposal:

Table 11: Rural Zone Code Relevant Considerations

Performance Criteria	Acceptable Solution	Performance Based Solution
PC1 Non-“Rural Activities” - Locational Criteria Non-“rural activities” are located in the Rural “Zone” only where those activities: (a) do not unduly impact on the character and amenity of the locality; (b) are directly and primarily associated with rural activities, a natural resource related industry or natural or cultural resources; (c) cannot reasonably be located in another more appropriate zone; (d) do not prejudice the existing or future productive capacity of rural land or other natural resources; and (e) do not adversely affect the landscape values and scenic qualities of the locality.	No acceptable solution is prescribed.	PC1 – Complies The proposed development is for an airport operation to support a planned natural resource related industry (mine). The airport has been strategically located within close proximity to the mine and the workers accommodation village that is to service the mine. The immediate area surrounding the proposed airport is currently used for a mix of cattle grazing and mining exploration activities. The airport is seen as a supporting form of supplementary infrastructure to support the expanded mining activities. Importantly, the remoteness of the area should assist in minimising any potential adverse amenity and/or character impacts for the airport use. Due to the direct relationship between the airport and the mine workers accommodation village,

		the location is considered ideal. Due to the setting of the mine a considerable distance from any nearby non-rural zoned land, there are not considered to be any reasonable alternatives. The site for the airport has been chosen to sit outside the planned mining area such that the productive capacity of natural resources is maintained. Where required, appropriate landscaping could be implemented to assist in reducing any potential loss of landscape values, however given the remoteness of the area any such inclusion is not considered necessary and has not been included as part of the current design. Accordingly, it is considered that the proposed airport is appropriately located within the rural zone to support a natural resource related industry.
PC5 “Residential Activities” Land within the Rural “Zone” is maintained for rural activities.	For “caretaker’s residences”: AS5 No more than 1 (one) “caretaker’s residence” per lot. For all other “residential activities”: No acceptable solution is prescribed.¹⁴	PC5 – Performance Solution As this proposal is impact assessable, it is required to demonstrate compliance with relevant sections of the planning scheme (amongst other aspects). Where any conflict occurs, there must be sufficient grounds to overcome any areas of non-compliance for it to be favorably considered. As the proposed airport is not a rural use, it is considered to conflict with this specific performance criteria. Importantly however, it is also noted that the airport use and its’ direct linkage to the natural resource related industry, does not necessarily mean that it is a “residential activity” as drawn to by the performance criterion. Notwithstanding, a more strategic level of assessment has been undertaken to demonstrate the suitability of the proposed airport. Specifically, detailed assessment has been undertaken against the prescribed outcomes for the Rural zone as s4.1.2.2 of the Planning Scheme states that these are the “purpose of the

		code". This strategic level assessment is considered consistent with the impact assessable nature of the application and consistency between the proposed development and the outcomes of the Rural zone is considered to represent 'sufficient grounds'. Outcome (1) of the code includes that the rural zone "<i>retains its viability as an area of primary production and natural resource use, including mining</i>". This proposed airport is a critical piece of supplementary infrastructure to support the planned mining activity. Outcome (2) of the code deals with the appropriate location of rural and mining activities. This proposed airport is to support expanded mine exploration activities that are occurring on the site and in this regard is appropriately located. Outcome (3) include obligations of development including appropriate access; environmental maintenance; flood immunity and infrastructure servicing. Broader strategies and studies have been included within the EIS/SEIS that deal with matters such as access and environmental management. Supporting information has been included within this application in relation to bulk earthworks/flooding and infrastructure servicing to demonstrate the suitability of the site. Outcome (4) prescribes a range of "appropriate uses" within the rural zone. A number of these uses include those reasonably associated with a natural resource use and/or natural resource industry. As the airport is planned to support the mine, it is considered to represent one such compatible use. In this regard, it is considered that the proposed airport is appropriate and there are sufficient grounds to justify the identified location.
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PC27 Air Emissions Air emissions from “premises” do not cause environmental harm or nuisance to adjoining properties or “sensitive land uses”.	No acceptable solution is prescribed.	PC 27 Performance Solution The operation of a private airport on the land obviously has potential to impact on the amenity of adjoining properties and/or sensitive land uses in regards to air emissions. The airport constitutes off-site infrastructure which is deemed critical to the successful operation of the Carmichael coal mine in that it will be the primary method by which workers will access the site, and will also be used as part of the goods supply chain. On that basis, the EIS process will be the authorizing mechanism by which broader issues of economic importance and overriding needs are discussed in the context of resolving potential or perceived land use conflicts. In the same regard, the EIS documentation will seek to mitigate the impacts of airport emissions on the surrounding and broader locale, hence it will be important that any operational criteria and air quality measures set in the conditions of the Coordinator General’s report for the EIS are used as the basis of any conditions applied by the local authority to the proposed airport MCU.
PC28 Noise Emissions Noise emissions from “premises” do not cause environmental harm or nuisance to adjoining properties or “sensitive land uses”.¹⁸	No acceptable solution is prescribed.	PC28 Complies The operation of a private airport on the land obviously has potential to impact on the amenity of adjoining properties and/or sensitive land uses in regards to noise emissions. The airport constitutes off-site infrastructure which is deemed critical to the successful operation of the Carmichael coal mine in that it will be the primary method by which workers will access the site, and will also be used as part of the goods supply chain. On that basis, the EIS process will be the authorizing mechanism by which broader issues of economic importance and overriding needs are

		discussed in the context of resolving potential or perceived land use conflicts. In the same regard, the EIS documentation will seek to mitigate the impacts of airport noise emissions on the surrounding and broader locale, hence it will be important that any operational criteria and noise attenuation measures set in the conditions of the Coordinator General's report for the EIS are used as the basis of any conditions applied by the local authority to the proposed airport MCU.
PC33 Good Quality Agricultural Land Areas Good quality agricultural land areas as identified on the Land Characteristics Map – Good Quality Agricultural Land are conserved and managed for the longer term and protected from development that may lead to its alienation or diminished productivity.	No acceptable solution is prescribed.	PC33 – Performance Solution The subject site has traditionally been associated with grazing related agricultural operations and as such, any departure from this historical use requires careful consideration. On a project wide (macro scale), the land to be used for the mine and off-site infrastructure items is being considered as a whole and is to be dealt with on a project wide scale. This consideration includes aspects of varied land uses and applicable offsets/integration policies. At the level of the proposed use (micro scale), the use of the identified location for an airport represents less than 0.2% of the existing land mass of the Moray Downs property. In this regard, it is not considered that this airport use will compromise or fragment the remaining agricultural use of the site and surrounds.
PC39“Airport” “Airport” activities: (a) do not adversely impact on the amenity of surrounding residents; (b) ensure the safe operation of aeronautical and support activities; and (c) ensure the safety of surrounding “Premises”.	No acceptable solution is prescribed.	PC39 – Performance Solution The establishment and operation of a private airport on the land obviously has potential to impact on the amenity and safety of surrounding residents. The airport constitutes off-site infrastructure which is deemed critical to the successful operation of the Carmichael Coal Mine in that it will be the primary method by which workers will

		access the site, and will also be used as part of the goods supply chain. On that basis, the EIS process will be the authorizing mechanism by which broader issues of economic importance and overriding needs are discussed in the context of resolving potential or perceived land use conflicts. In the same regard, the EIS documentation will seek to mitigate the impacts of airport air and noise emissions on the surrounding and broader locale, hence it will be important that any operational criteria and noise attenuation measures set in the conditions of the Coordinator General's report for the EIS are used as the basis of any conditions applied by the local authority to the proposed airport MCU. From a safety perspective, the scale and status of the airport will mean that a separate registration and certification process will need to be completed with the appropriate federal regulatory bodies post land use approval before flights can commence.
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As can be seen from the above table, this proposal is considered to be compliant with the relevant Zone Code. Notwithstanding, any performance solutions proposed are clearly outlined and discussed in the detailed assessment of this proposal against the relevant codes submitted in support of this application.

7.8 Summary of Code Assessment

Based on the detailed assessment of the proposed application against the relevant code it has been determined that the proposal is generally compliant with the provisions and criteria of the 'Rural Zone' code. The Table above demonstrates the provisions / criteria that were deemed significant to the assessment of this proposal. For further information in relation to this assessment, please refer to the complete analysis contained within **Appendix B – Code Assessment**.

8.0 Key Site Based Considerations

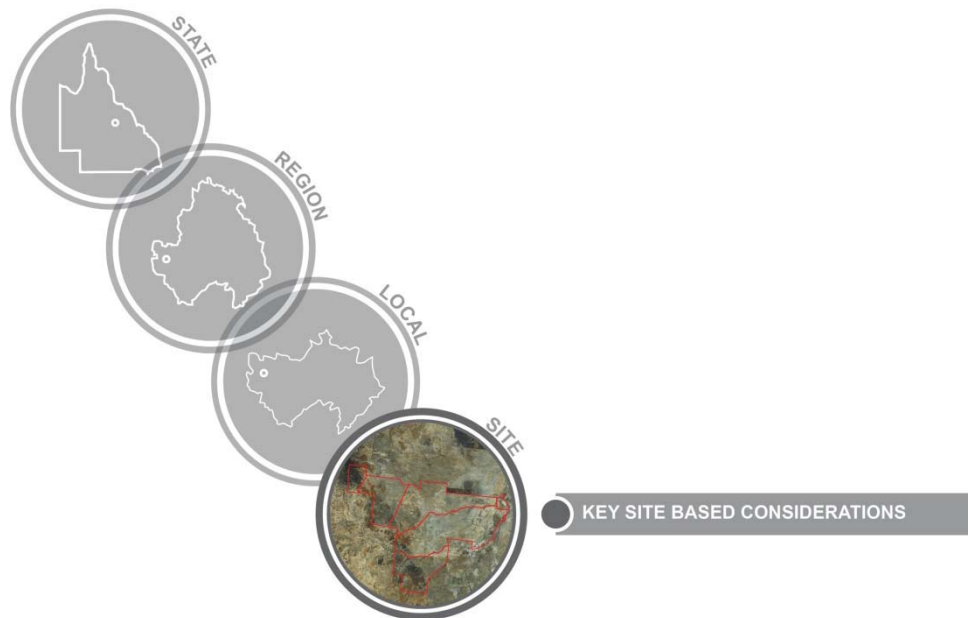


Figure 13: Hierarchy of assessment – Key Site Based Considerations, Source: GDP, 2013

The following key matters are considered relevant to the consideration and determination of this development application.

8.1 Application Context

The airport proposed is one of the critical off-site infrastructure items identified as being required to support the broader Carmichael Coal Mine and Rail project proposed. Through the inclusion of the application material as part of the SEIS submission, it will not only enable a greater understanding of the wider project to be understood by decision makers it also has the potential to lead to decreased SPA IDAS assessment processes when a subsequent application is lodged. This airport forms one (1) element of the core off-site infrastructure items currently identified as being required to support the broader project, with other aspects including that of an industrial area and mine workers accommodation village.

The key function of the airport will be to function as the primary gateway portal for workers to and from the site. The airport will also provide enhanced emergency access to the site at all times. Whilst the airport has the ability to be constructed in two (2) stages, it is considered likely

that it will be developed to the ultimate extent prior to the commencement of any aeronautical activities.

It is considered appropriate and beneficial that this core off-site infrastructure item is brought forward and included within the current coordinator general's consideration and determination of the project.

8.2 Site Suitability

The chosen location for the airport is situated within the 'Rural Zone' of the Planning Scheme, with the general intent of this Zone to protect and provide for the growth of non urban uses within the region. The strategic location selected however reflects a broader set of considerations in relation to the spatial context of the airport to other core off-site infrastructure items and the planned mine itself. Whilst this chosen location is considered ideal in terms of the spatial context, further discussion is outlined below in relation to the four key outcomes identified by the Planning Scheme to guide in the achievement of the intent of the Rural Zone. Significantly, the viability of mining as a key land use is reflected in each.

Outcome (1) of the code includes that the rural zone "*retains its viability as an area of primary production and natural resource use, including mining*". This proposed airport is a critical piece of supplementary infrastructure to support the planned mining activity. Outcome (2) of the code deals with the appropriate location of rural and mining activities. This proposed airport is to support expanded mine exploration activities that are occurring on the site and in this regard is appropriately located.

Outcome (3) includes obligations of development including appropriate access; environmental maintenance; flood immunity and infrastructure servicing. Broader strategies and studies have been included within the EIS/SEIS that deal with matters such as access and environmental management. Supporting information has been included within this application in relation to bulk earthworks/flooding and infrastructure servicing to demonstrate the suitability of the site. Outcome (4) prescribes a range of "appropriate uses" within the rural zone. A number of these uses include those reasonably associated with a natural resource use and/or natural resource industry. As the airport is planned to support the mine, it is considered to represent one such compatible use.

In this regard, it is considered that the proposed airport is appropriate and there are sufficient grounds to justify the identified location.

8.3 Siting and Design

Considerable time and effort has been spent in preparing the design proposed as part of this application in order to ensure an optimal result is achieved. Five (5) key design rationales have informed the resulting design, each of which will be described in further detail below:

1. *Location:* The proposed airport location has been chosen after detailed analysis of the subject site, operational requirements of aviation facilities and the operational requirements and location of proximate land uses. A 'Land Use Study' and several aviation based reports were commissioned in order to identify the appropriate location on the 'Moray Downs' property, resulting in the location proposed in this application.
2. *Runway Design:* The runway design was informed by two critical factors, orientation in terms of climatic conditions and proximate land uses and secondly length to ensure the facility could cater for the proposed aircrafts that are going to service the facility. Similar to the location, the runway design has been informed by several detailed reports that have assessed the requirements of the facility and proposed appropriate design parameters to be achieved.
3. *Terminal Facilities:* The terminal facilities have been designed to cater for the expected journeys that will move through the facility on an annual basis. On this basis core facilities will include a waiting lounge, a cafeteria, toilets, security screening, separate departure and arrival foyers, baggage conveyance areas in addition to general administration facilities.
4. *Primary Access:* The proposed airport will be accessed directly from Moray Carmichael Road using a new road that will be aligned on a generally north south orientation of approximately 230 metres. Appropriate laydown and parking facilities have been provided in order to ensure safe and efficient access can be gained from the facility.
5. *Building Height:* The proposed development has been designed with building and structure height as a crucial element of the design due to the operational requirements of aviation facilities. In this regard the proposed terminal facility has been designed to be a low set single storey structure, with associated structures developed in a consistent manner. All buildings and structures have been designed to comply with the requirements of aviation facilities and specifically the OLS standards.

It is considered that the proposed design adequately responds to the above key design rationales.

8.4 Operational Integrity

The operational requirements of the proposed airport have been carefully and extensively assessed to inform this development application. In this regard issues such as runway length, orientation, navigation requirements, visual aids, lighting, runway crust, taxiways, aprons, obstacle limitation surfaces (OLS), fencing, emergency services and fuelling facilities have all been assessed and strategies devised to ensure compliance with the relevant assessment bodies. It is important to note that this proposal relates to the development permit for the facility and that the operational requirements of the facility will need to be certified by Air Services Australia and the Civil Aviation Safety Authority.

8.5 Vegetation Clearing

To enable 'early works' to occur within the airport as well as enabling a more detailed understanding of the extent of works required to support the use, the full extent of vegetation clearing has been requested. The basis for this clearing has been drawn from the extensive PVMP report undertaken as part of the EIS/SEIS submission, in this regard the extent of vegetation requested to be cleared is considered justified.

The current mapped vegetation within this area includes that of 'of concern – dominant' regional ecosystems, with revised field mapping recently verifying that none of this regional ecosystem exists within the proposed development footprint.

For further information in relation to the extent of vegetation clearing proposed, please refer to **Appendix C – OPW Vegetation Clearing**.

8.6 Preparatory Earthworks

Detailed engineering design works have been undertaken as part of the preparation of this application material for the airport to inform the extent of earthworks proposed and also enable their early consideration. These design works have also been undertaken with the stormwater management strategy proposed in order to ensure that appropriate finished ground conditions are established.

The design strategy that underpinned the earthworks design was also heavily reliant on the flood immunity levels; appropriate fall of the runway and the intended measures to convey, capture and treat stormwater.

For further information in relation to the preparatory earthworks proposed, please refer to **Appendix D** – OPW Bulk Earthworks.

8.7 Environmentally Relevant Activities

Due to the need for on-site effluent treatment to be provided to service the planned airport use, an ERA permit is required to be obtained and the appropriate documentation has been included within this application material. An appropriate site based management plan has been prepared to support this ERA aspect and includes detailed analysis of the nature and type of application proposed as well as any necessary precautionary and emergency measures to be implemented on site.

Importantly, the location for the on-site effluent system has been chosen within moderate proximity to the terminal building to ensure appropriate proximity between both aspects. The location is well away from public and open areas of the terminal such that there should be no direct amenity or safety concerns.

For further information in relation to the on-site effluent system proposed, please refer to **Appendix E** – ERA Sewage Treatment. .

8.8 Site Servicing

In order to ensure that the chosen location for the airport was appropriate in terms of the ability for future essential services to be provided, a preliminary engineering services report was prepared and accompanies this application material. This report provides preliminary discussion on a site servicing strategy with respect to the future provision of civil services for the airport.

This report demonstrates that the airport will be able to be adequately serviced by potable water, sewerage, electrical services and vehicle access infrastructure. Where relevant, it also provides discussion on both interim and likely permanent servicing solutions. For further information in relation to the ability for civil services to be provided, please refer to **Appendix F** – Preliminary Servicing.

8.9 Stormwater

In conjunction with the detailed work that was undertaken for the airport in relation to bulk earthworks and vegetation clearing, a site based stormwater management plan was also prepared and accompanies this application material. This report provides a strategy in relation to the incorporation of stormwater quality and quantity techniques for the airport.

The strategy that has been proposed includes the construction of a consolidated bio-retention and detention basin zone at each end of the runway. Due to a natural ridgeline running through the airport area, two (2) separate catchments have been identified on either side of the ridgeline. Each consolidated basin zone will service each catchment area. This report confirms that subject to the implementation of the recommended quality and quantity techniques, stormwater runoff will be able to be treated in accordance and compliance with the following key criteria:

- Water Sensitive Urban Design principles and will not affect any peak flows downstream;
- Compliance with QUDM;
- Compliance with the State Planning Policy 4/10 Healthy Waterways; and
- Ecological sustainability in terms of the development's impact upon receiving waters; and the viability of the proposed development.

For further information in relation to the recommended conveyance, capture and treatment of stormwater within the industrial area, please refer to **Appendix G – Stormwater Management**.

9.0 Conclusion

The Applicant has demonstrated that the proposal is considered consistent with the intent and relevant development provisions at both state and local level and specifically contained within the Planning Scheme for Belyando Shire.

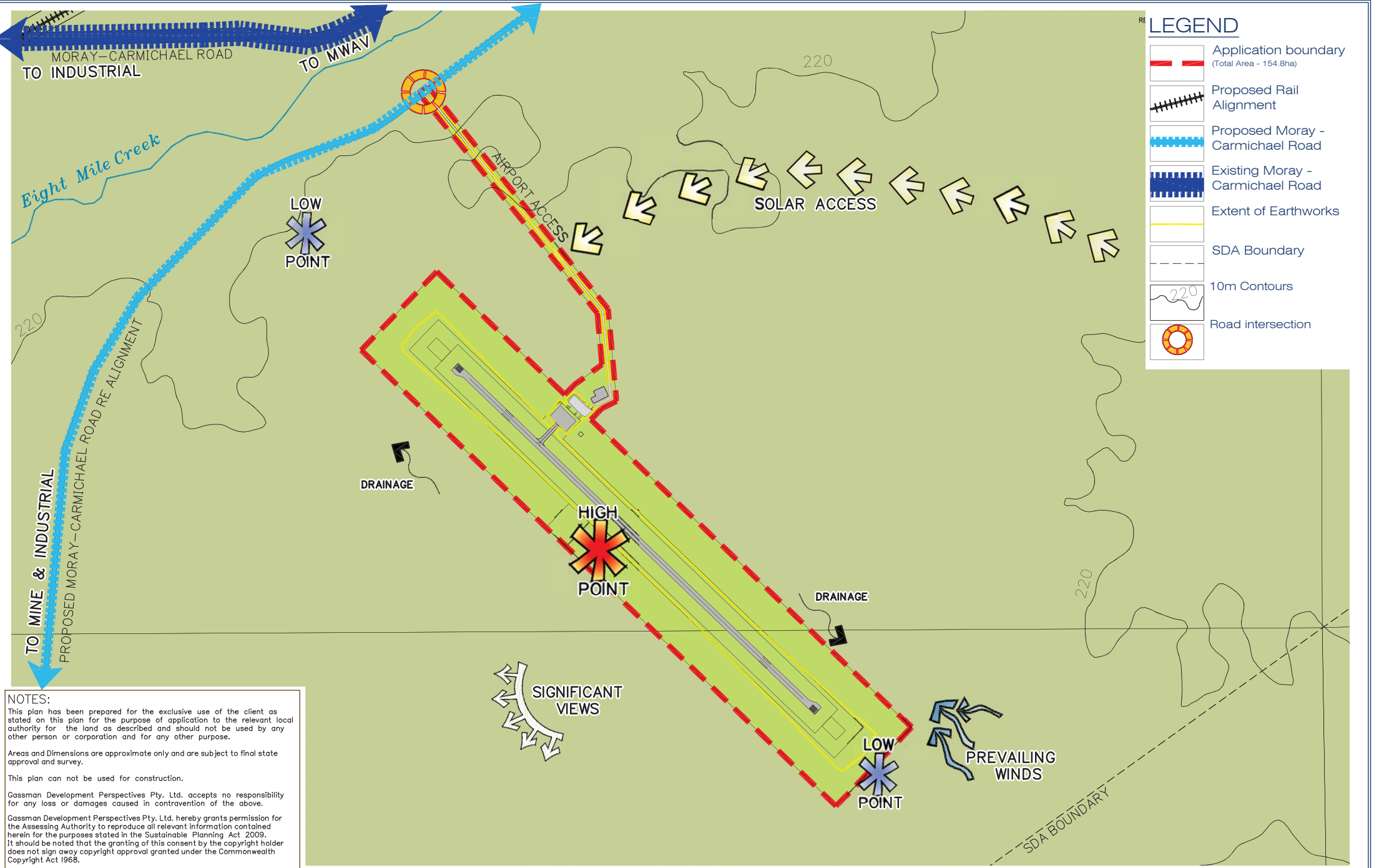
The proposed development represents a crucial element of a wider strategy to develop a Mine Operation on the 'Moray Downs' significantly reducing the locations isolation.

Further the proposed development is:

- Consistent with the State and regional planning provisions applicable to the subject site;
- Consistent with the general planning principles in the Planning Scheme;
- Consistent with the intent and content of the 'Rural Zone';
- Generally in accordance with the performance criteria of the applicable development code, with alternative solutions provided where necessary; and
- Appropriately designed so that the development integrates within the context of the site and its surrounds without adversely impacting on neighbouring uses.

The proposed development is reasonable and appropriate within the context of the site and the planning framework for the area. Accordingly, it is requested that this application be favourably considered.

Appendix A: Plans and Drawing



LEGEND

- Application boundary (Total Area - 154.8ha)
- Proposed Rail Alignment
- Proposed Moray - Carmichael Road
- Existing Moray - Carmichael Road
- Extent of Earthworks
- SDA Boundary
- 10m Contours
- Road intersection

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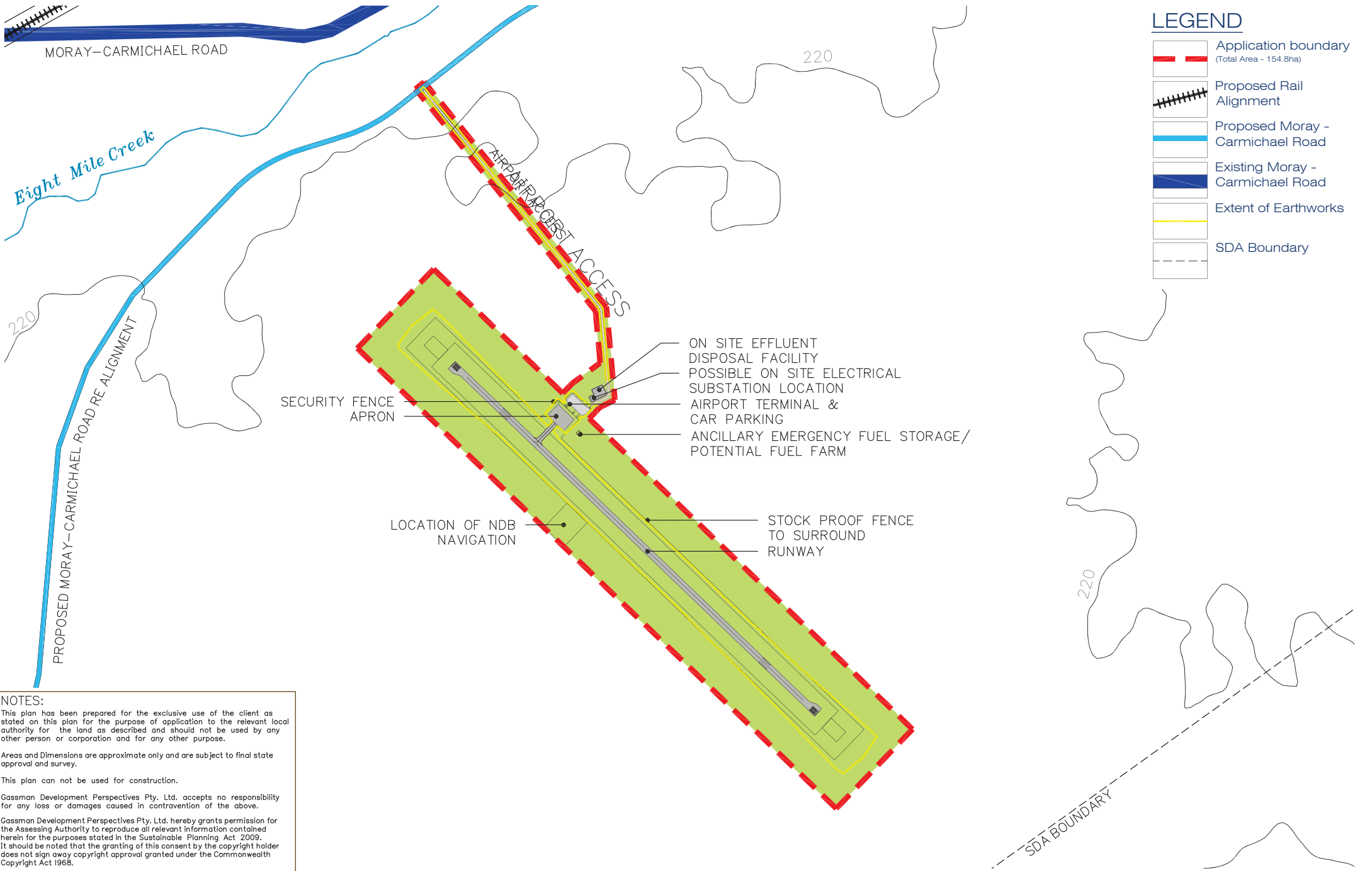
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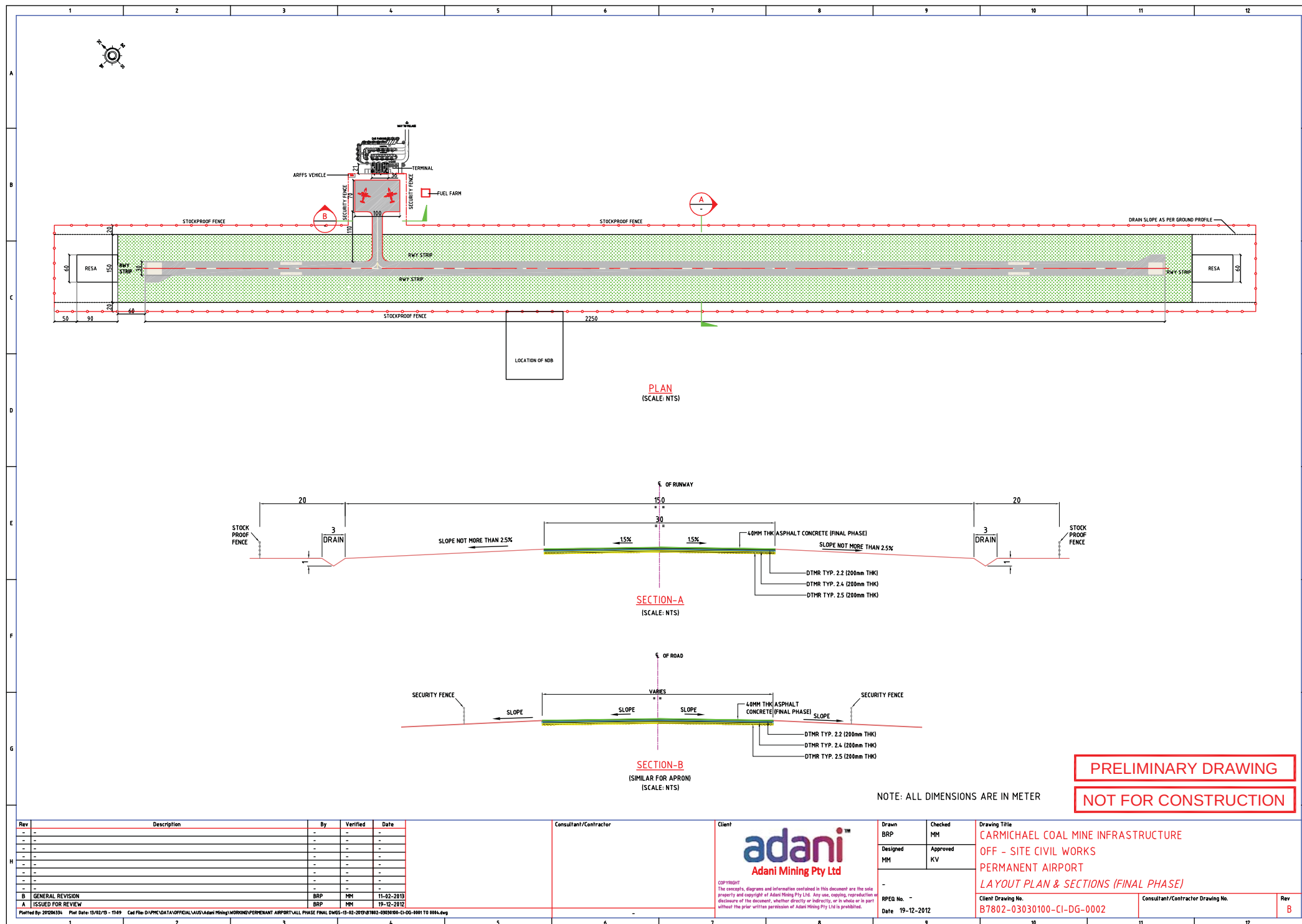
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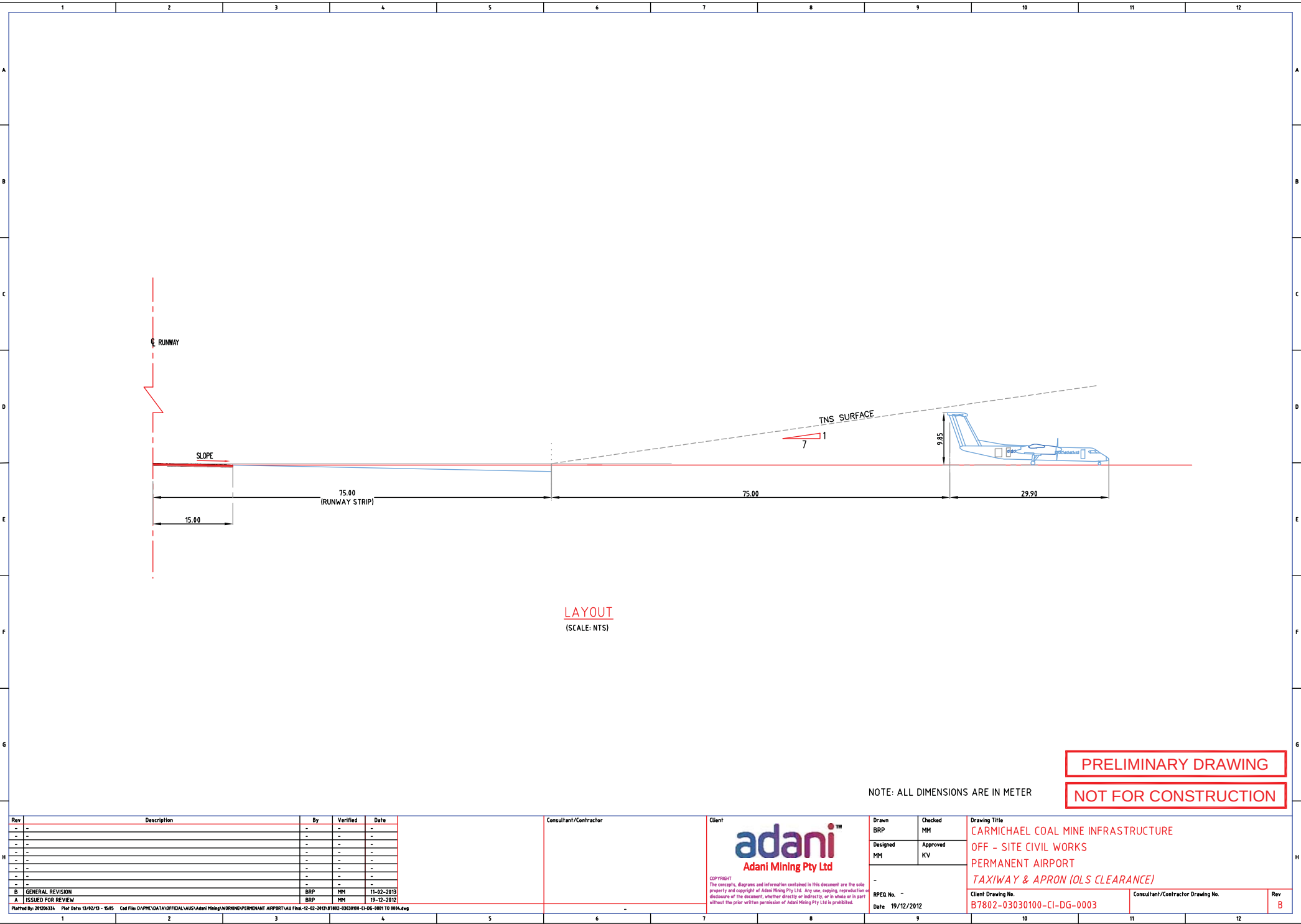
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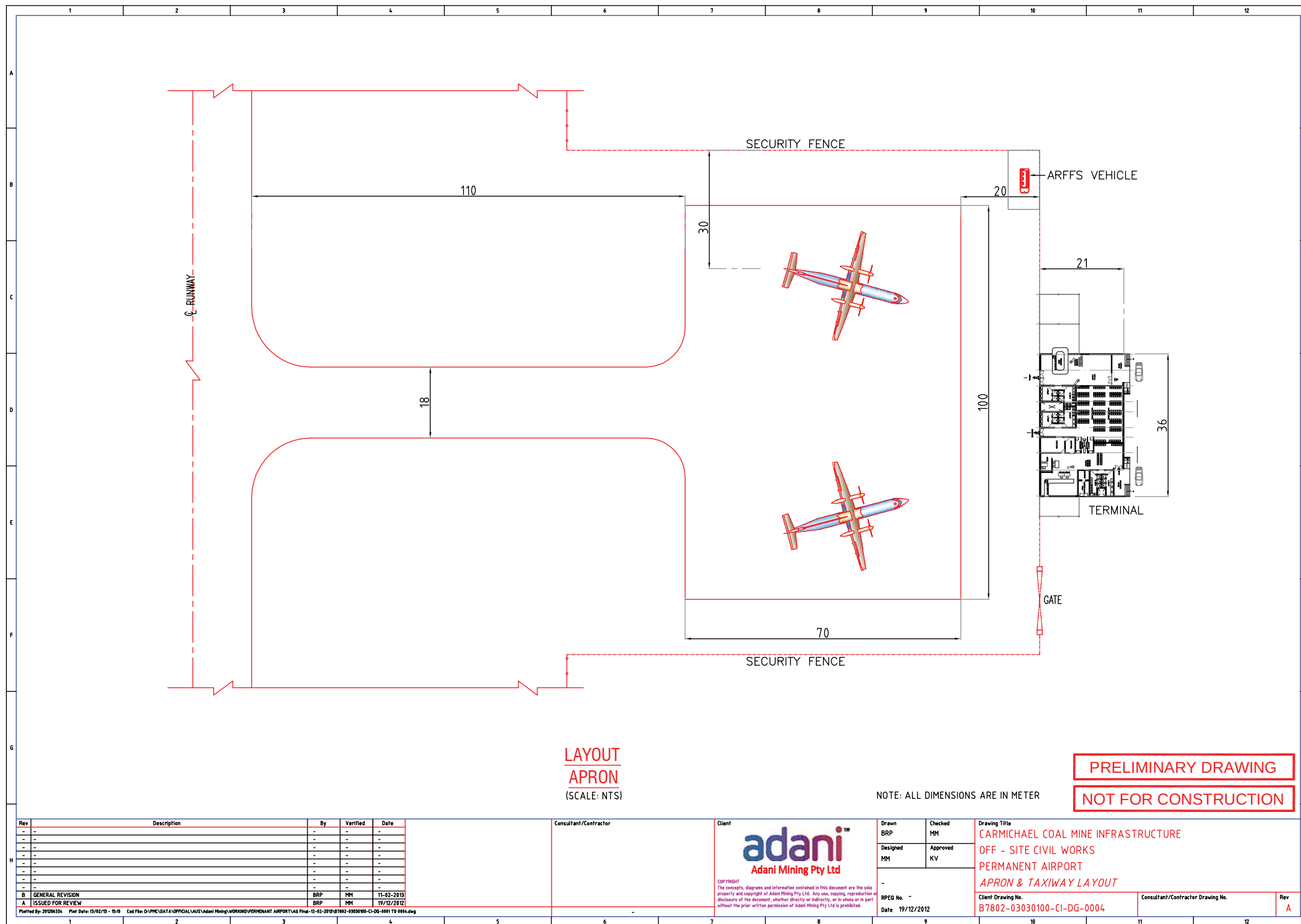
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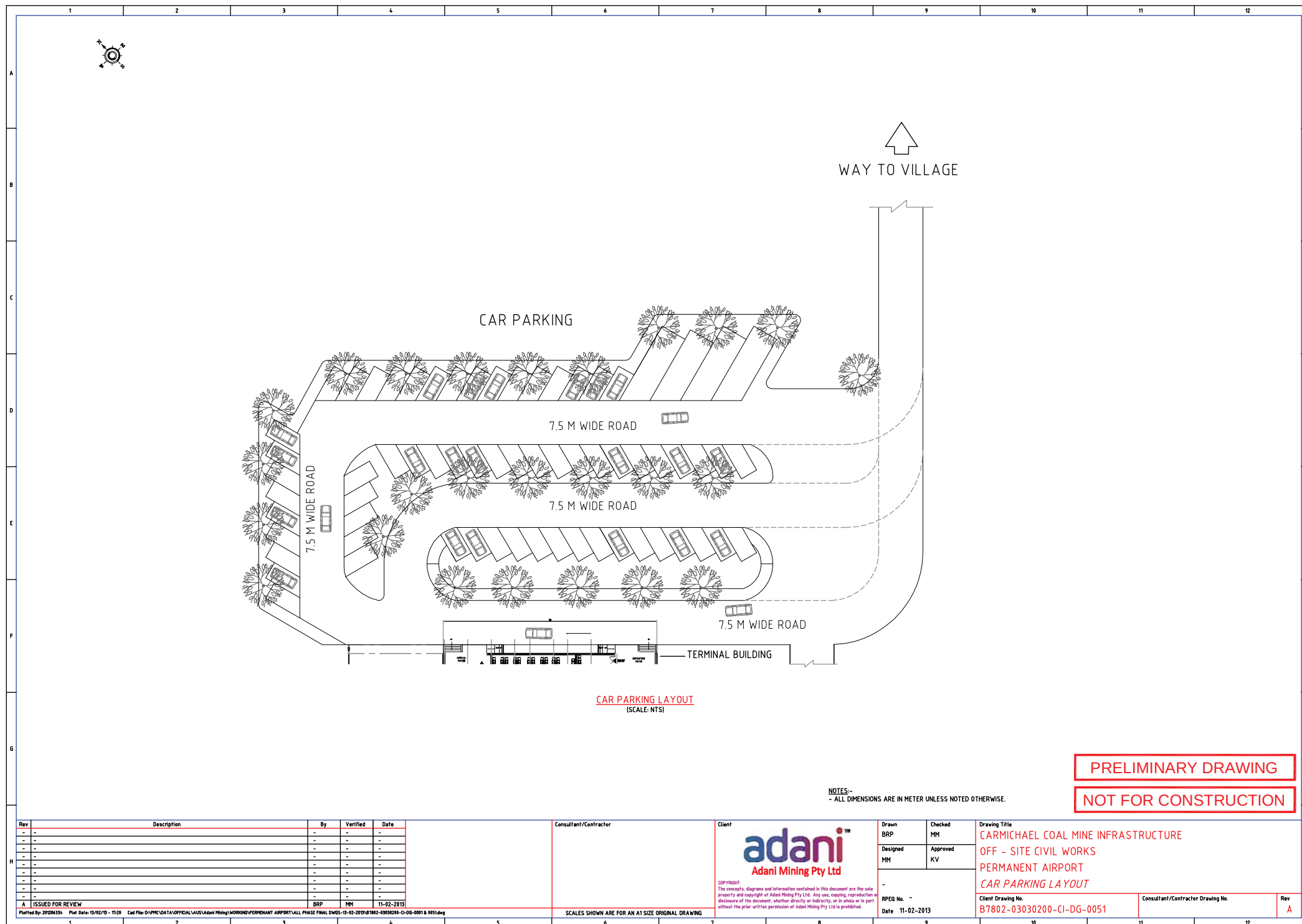
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Consultant/Contractor

Client

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Adani Mining Pty Ltd

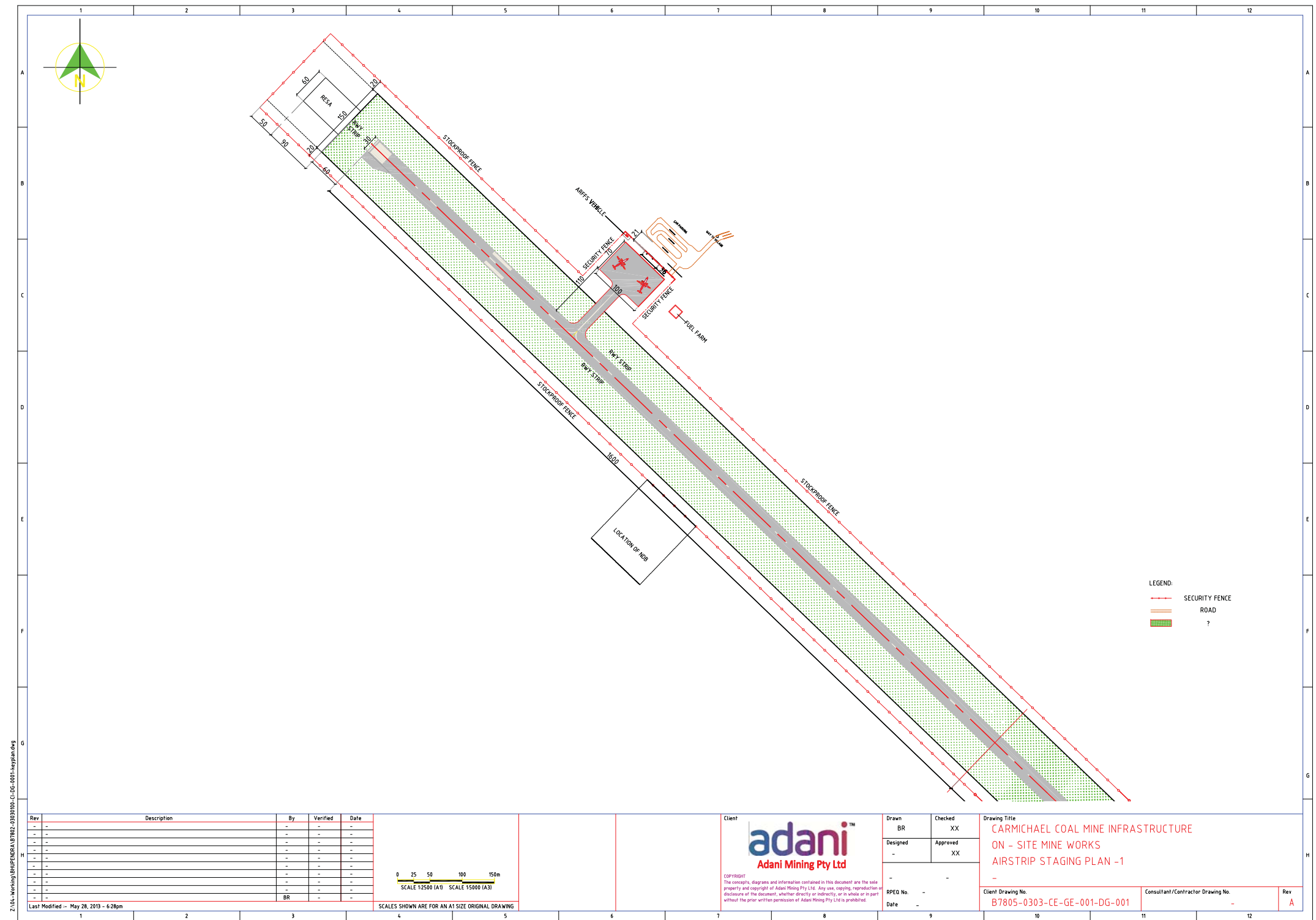
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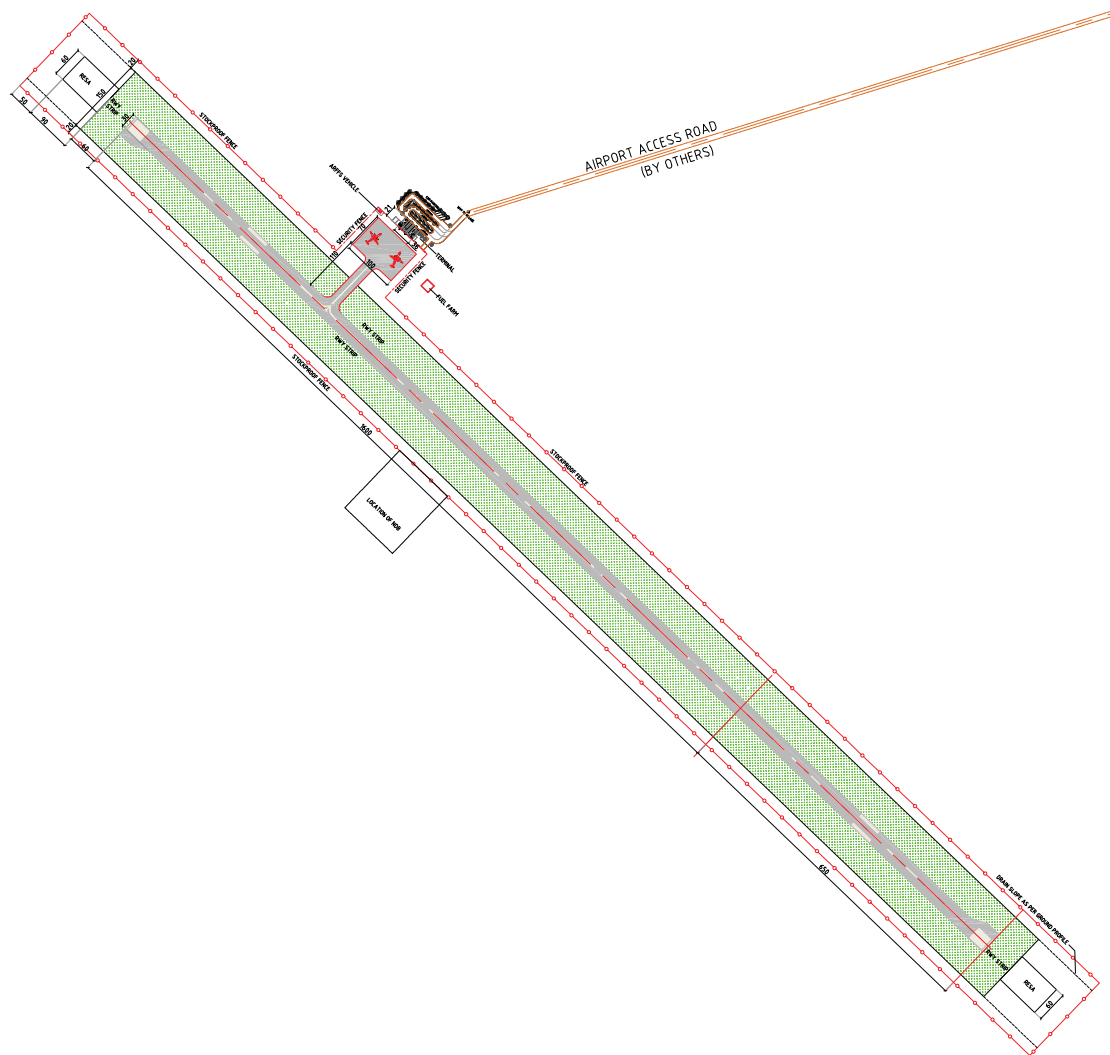
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Drawing Title			
CARMICHAEL COAL MINE INFRASTRUCTURE ON - SITE MINE WORKS AIRSTrip STAGING PLAN -2 -			
Client Drawing No. 2022-05-05-004-DE-004		Consultant/Contractor Drawing No.	Rev

Appendix B: Code Assessment

4.1.2.3 Performance Criteria and Acceptable Solutions – “Material change of Use”

“Material change of Use”		
Performance Criteria	Acceptable Solution	Proposal Compliance
Location		
PC1 Non-“Rural Activities” - Locational Criteria Non-“rural activities” are located in the Rural “Zone” only where those activities: do not unduly impact on the character and amenity of the locality; are directly and primarily associated with rural activities, a natural resource related industry or natural or cultural resources; cannot reasonably be located in another more appropriate zone; do not prejudice the existing or future productive capacity of rural land or other natural resources; and do not adversely affect the landscape values and scenic qualities of the locality.	No acceptable solution is prescribed.	PC1 – Complies The proposed development is for an airport operation to support a planned natural resource related industry (mine). The airport has been strategically located within close proximity to the mine and the workers accommodation village that is to service the mine. The immediate area surrounding the proposed airport is currently used for a mix of cattle grazing and mining exploration activities. The airport is seen as a supporting form of supplementary infrastructure to support the expanded mining activities. Importantly, the remoteness of the area should assist in minimising any potential adverse amenity and/or character impacts for the airport use. Due to the direct relationship between the airport and the mine workers accommodation village, the location is considered ideal. Due to the setting of the mine a considerable distance from any nearby non-rural zoned land, there are not considered to be any reasonable alternatives. The site for the airport forms has been chosen to sit outside the planned mining area such that the productive capacity of natural resources is maintained. Where required, appropriate landscaping could be implemented to assist in reducing any potential loss of landscape values, however given the remoteness of the area any such inclusion is not considered necessary and has not been included as part of the current design. Accordingly, it is considered that the proposed airport is appropriately located within the rural zone to support a natural resource related industry.
Amenity		
PC2 Non-“Rural Activities” - Scale Non-“rural activities” are of a scale that is consistent with the amenity and character of the locality and do not prejudice the operation and viability of other “uses” or activities in the Rural “Zone” or other “zones”.	AS2 The “total use area” is less than 150m².	PC2 – Performance Solution The scale of the proposed airport is a direct relation to the scale and form of mining operations proposed on the site. Once operational, the mine will set the character of the immediate area and this airport will complement such character. Additionally, it is also noted that there are a number of nearby established aerodrome/airport facilities located within the immediate area. Any expansion of such facilities would complement and enhance this established character.

		The areas included within the EIS/SEIS for the mine and mine support aspects (off-site infrastructure) are clearly identified and outlined. The proposed airport is located in one such area and as such it is not considered that it will prejudice the operation and/or viability of other uses within the Rural zone.
PC3 Non-“Rural Activities” - Operating Hours Non-“rural activities” are operated so as to ensure that the activities and the operation of equipment occur at appropriate times to protect the amenity of the locality.	AS3 Non-“rural activities” are operated only between the hours of 7:00am and 6:00pm.	PC3 – Performance Solution Flights into and/or out of the private airport facility are currently programmed to occur on Tuesdays, Wednesdays and Sundays. Whilst it is also intended that these flights be conducted within the nominated daylight hours to reduce reliance on high level navigational aids, the precise flight schedule has not been developed and there may need to be some flexibility outside of the nominated hours to facilitate flights out of, and into, connecting airports. The Applicant would accept conditions of approval which require that a detailed flight schedule be developed, and any flight activities outside of the nominated times be reduced and/or restricted where possible, and mitigated by appropriate operational procedures. It is anticipated that this mitigation framework will be the subject of further discussion between all stakeholders during the balance of the application assessment.
PC4 Non-“Rural Activities” - Delivery of Goods The loading and unloading of goods in connection with non-“rural activities” occurs at appropriate times to protect the amenity of the locality.	AS4.1 Loading and unloading occurs only between the hours of: (a) 7:00am and 6:00pm, Monday to Friday; and (b) 7:00am and 12:00 (noon) on Saturdays. AS4.2 No loading and unloading occurs on Sundays and public holidays.	PC4 – Performance Solution Due to the rural and remote setting of the airport, typical considerations in relation to loading and unloading hours are not considered relevant in this particular instance. The proposed airport is to support a 24 hour mining operation and as such it is considered likely that a similar 24 hour loading/unloading schedule may also occur. As the airport is located a considerable distance from the workers accommodation village and there are no other nearby sensitive land uses, any loading/unloading that occurs is not considered likely to result in adverse amenity impacts on the surrounding locale.
PC5 “Residential Activities” Land within the Rural “Zone” is maintained for rural activities.	For “caretaker’s residences”: AS5 No more than 1 (one) “caretaker’s residence” per lot. For all other “residential activities”: No acceptable solution is prescribed.¹⁴	PC5 – Performance Solution As this proposal is impact assessable, it is required to demonstrate compliance with relevant sections of the planning scheme (amongst other aspects). Where any conflict occurs, there must be sufficient grounds to overcome any areas of non-compliance for it to be favorably considered. As the proposed airport is not a rural use, it is considered to conflict with the performance criteria. Importantly however, it is also noted that the airport use and its’ direct linkage to the natural resource related industry, does not necessarily mean that it is a “residential activity” as drawn to by the performance criterion.

		Notwithstanding, a more strategic level of assessment has been undertaken to demonstrate the suitability of the proposed airport. Specifically, detailed assessment has been undertaken against the prescribed outcomes for the Rural zone as s4.1.2.2 of the Planning Scheme states that these are the “<i>purpose of the code</i>”. This strategic level assessment is considered consistent with the impact assessable nature of the application and consistency between the proposed development and the outcomes of the Rural zone is considered to represent ‘sufficient grounds’. Outcome (1) of the code includes that the rural zone “<i>retains its viability as an area of primary production and natural resource use, including mining</i>”. This proposed airport is a critical piece of supplementary infrastructure to support the planned mining activity. Outcome (2) of the code deals with the appropriate location of rural and mining activities. This proposed airport is to support expanded mine exploration activities that are occurring on the site and in this regard is appropriately located. Outcome (3) includes obligations of development including appropriate access; environmental maintenance; flood immunity and infrastructure servicing. Broader strategies and studies have been included within the EIS/SEIS that deal with matters such as access and environmental management. Supporting information has been included within this application in relation to bulk earthworks/flooding and infrastructure servicing to demonstrate the suitability of the site. Outcome (4) prescribes a range of “appropriate uses” within the rural zone. A number of these uses include those reasonably associated with a natural resource use and/or natural resource industry. As the airport is planned to support the mine, it is considered to represent one such compatible use. In this regard, it is considered that the proposed airport is appropriate and there are sufficient grounds to justify the identified location.
PC6 Height The height of “buildings” and “structures” does not impact adversely on the amenity of the locality and is consistent with the predominant rural form.	AS6 “Buildings” and “structures” other than those within 100 metres of the boundary of an “airport”¹⁵ are not more than: (a) 8.5 metres; and (b) 2 (two) storeys, at any point above natural	AS6 - Complies The proposed buildings and structures associated with the airport will not exceed 8.5 metres, or two (2) storeys, in height.

	ground level. (Except where establishing in an existing “building” and no “building works” are being undertaken for that existing “building”, and excluding windmills, silos and other rural operational equipment).	
PC7 Setbacks and Boundary Clearances “Buildings” and “structures” are located to ensure the rural amenity is maintained.	AS7.1 “Buildings” and “structures” have a setback of not less than 20 metres from any road frontage other than a State Controlled Road as identified on Land Characteristics Map – Features Map. AS7.2 “Buildings” and “structures” have side and rear boundary clearances of not less than 15 metres from property boundaries (except where establishing in an existing “building” and no “building works” are being undertaken for that existing “building”).	AS7.1 - Complies Building setbacks in excess of 20m are provided to public road frontages. AS7.2 – Complies All side and rear boundary setbacks are in excess of 15 metres from property boundaries.
PC8 Transport Movements Transport movements associated with the use protect the amenity of the locality.	For “rural activities” and “industrial activities”: AS8 Transport movements do not occur through residential areas. For all other “uses”: No acceptable solution is prescribed.	AS8 – Complies Separate connection roads are being provided to the airport and the newly planned workers accommodation village. This will assist in ensuring that transport for the airport does not travel through residential areas. Due to the remoteness of the airport and mine site, it is not considered that there will be any significant impact on the amenity of the locale as a result if transport movements directly linked to the airport.
PC9 “Building” and “Structure” Design “Buildings” and “structures” are designed such that the amenity of the locality is protected and maintained.	No acceptable solution is prescribed.	PC9 – Complies All buildings/structures proposed in association with the airport are generally of low-rise built form and are a function of their specific use. The design standard is considered to be consistent with that which could be reasonably expected for a remotely located private airport.

		All buildings/structures are to be well set back from property boundaries and are not considered to result in adverse built form amenity impacts within the locale.
PC10 Ridgelines and Escarpments Ridgelines and escarpments are maintained in a natural state to protect rural character, landscape values, and visual amenity.	No acceptable solution is prescribed.	PC10 - Complies The airport is not located on a ridgeline or escarpment.
PC11 Landscaping and External Activity Areas Landscaping and external activity areas are provided on-site to: (a) contribute to a pleasant and functional rural built form; (b) provide positive sun and breeze control; (c) make provision for recreation areas; and contribute to the positive visual qualities of the locality.	No acceptable solution is prescribed.	PC11 – Complies The current application is to authorise the design, siting and operation of the airport use on the identified location. Specific matters in relation to landscaping are to be subject to separate detailed operational works application. Importantly, appropriate conditions can be set as part of the consideration of this application within the SEIS process such that any future applications for such works comply with the relevant requirements. Additionally, due to the nature of the use, the provision of external activity areas is not considered necessary.
PC12 Lighting The design of lighting does not prejudice the amenity of the locality through poorly directed lighting, lighting overspill or lighting glare.	AS12 Direct lighting or lighting does not exceed 8.0 lux at 1.5 metres beyond the boundary of the site.	AS12 – Complies The current application is to authorise the design, siting and operation of the airport use on the identified location. Specific matters in relation to detailed lighting design and provision are to be subject to separate detailed design exercises. Importantly, there is no intent for light nuisance to be created external to the site. Appropriate conditions can be set as part of the consideration of this application within the EIS/SEIS process such that all future lighting complies with the relevant requirements.

C13 Separation of Incompatible Land Uses Separation distances are provided to ensure: (a) the future viability of surrounding “uses”; (b) infrastructure items are protected from incompatible “development”; an appropriate standard of amenity and public safety; and conflict arising from incompatible “uses” is minimised.	For “sensitive land uses” and “rural activities” other than “intensive animal industries”: AS13.1 Minimum separation between “sensitive land uses” and “rural activities” are as stated in Schedule 2, Division 1: Separation Distances – Agricultural and Residential Uses For “sensitive land uses” and “intensive animal industries”: AS13.2 Minimum separation distances between “sensitive land uses” and “intensive animal industries” are as stated in Schedule 2, Division 2: Separation Distances – Intensive Animal Industries, Section 2.1. For “grazing”: AS13.3 Pens and yards maintain a minimum separation distance of 300 metres to “sensitive land uses” not associated with the “grazing”. For “uses” other than “sensitive land uses”¹⁶ and “extractive industries”: AS13.4 “Buildings”, “structures” and “outdoor activity areas” maintain a minimum separation distance to “extractive industries” as stated in Schedule 2, Division 3: Separation Distances –	AS13 – Complies As the proposed airport is intended to service and support the broader mining activity, it is located within close proximity to mining operations. Importantly, the airport location has been strategically selected such that it is clear and does not impact on the extractive industry operations. Appropriate operational safety parameters have also been incorporated into the design (including building height restrictions and security fencing) to ensure that appropriate levels of public safety are achieved. In this regard, the location and intent of the airport is not considered likely to unreasonably impact on the viability and operation of surrounding areas.
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	Extractive Industries, Section 3.1. For all “uses”: AS13.5 “Buildings”, “structures” and “outdoor activity areas” maintain a minimum separation distance to petroleum and gas pipelines and refuse tips as stated in Schedule 2, Division 5: Separation Distances – Infrastructure Items, Section 5.1.	
Infrastructure		
PC14 Water Supply All “premises” have an adequate volume and supply of water for the “use”.	AS14.1 “Premises” are connected to Council’s reticulated water supply system. or AS14.2 “Premises” are connected to an approved water allocation as provided by the relevant agency. or For “detached houses” or “caretakers residences”: AS14.3 “Premises” are connected to a rain water tank with a minimum capacity of: 45, 000 litres where not in a reticulated water supply area; (b) 22, 000 litres where in a reticulated water supply area.	AS14 – Complies The proposed airport is to be provided with appropriate levels of water servicing. Provisions in relation to the permanent supply of water to the project (including the airport) are generally outlined within the broader EIS/SEIS under consideration. In support of this current application, infrastructure and servicing information has been provided in Appendix F (Preliminary Servicing report) to outline possible interim servicing solutions until such time that the permanent solution is provided. Importantly, there is the intent for appropriate services of water supply to be provided to the airport at all times. Appropriate conditions can be set as part of the consideration of this application within the EIS/SEIS process such that all future water supply complies with the relevant requirements.
PC15 Effluent Disposal All “premises” provide for the	AS15.1 “Premises” are connected to	AS15 – Complies The proposed airport is to be provided with appropriate levels of servicing.

treatment and disposal of effluent and other waste water to ensure the protection of public health and environmental values.	Council's reticulated sewerage system. or AS15.2 "Premises" not in a sewerred area have an on-site effluent disposal system in accordance with Schedule 1, Division 4: Standards for Sewerage Supply, Section 4.2.	In support of this current application, infrastructure and servicing information has been provided to outline the preferred effluent disposal strategy. Specifically, a site based management plan (see Appendix E) and Environmentally Relevant Activity application has been prepared and accompanies the development application material in relation to the provision of an on-site effluent disposal system to the Airport.
PC16 Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values.	AS16 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1.	AS16 – Complies Detailed stormwater reporting has been prepared and accompanies this current application (see Appendix G).
PC17 Electricity "Premises" are provided with an adequate supply of electricity for the "use".	AS17 All "premises" have a supply of electricity.	AS17 – Complies Electricity will be supplied to the airport site under the terms described within the EIS for the broader mine and offsite infrastructure components; hence the Applicant would accept a condition requiring that such an electricity connection be made.
PC18 Vehicle Access Vehicle access is provided to ensure the safe and functional operation for motorists and pedestrians.	For all self-assessable uses: AS18.1 All "premises" have vehicle access to a formed road. Access is designed and constructed in accordance with Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring Areas and Access, Section 2.3(2). For all other "uses": AS18.2 All "premises" have vehicle access to a formed road. Access is designed and constructed in accordance with	AS18 – Complies Vehicular access will be provided into the airport via a proposed new private driveway which connects to Moray Carmichael Road in the location described on the Concept Plan contained in Appendix A of this report. Moray-Carmichael Road will be 'formed' as a result of road upgrade works to be completed as a consequence of the Carmichael Mine EIS approval.

	Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring Areas and Access, Section 2.3(1).	
PC19 Vehicle Parking and Service Vehicle Provision Vehicle parking and service vehicle provision is adequate for the “use” and ensures safe and functional operation for motorists and pedestrians.	AS19.1 All “uses” provide vehicle parking in accordance with Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring Areas and Access, Section 2.2(1) (a). AS19.2 Car parking, service vehicle parking and manoeuvring areas are designed and constructed in accordance with Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring Areas and Access, Section 2.2(1) (b).	PC19 – Performance Solution The Concept Plan contained in Appendix A of this report illustrates the location of proposed vehicle parking and maneuvering areas proposed adjacent to the airport terminal facility. Given that the airport will be a private facility designed to cater for the needs of Carmichael coal mine workers, the amount of car parking required is far less than that which would need to be dedicated at a public facility, and instead will cater for the functional car parking load required.
PC20 Roads Adequate all-weather road access is provided between the “premises” and the existing road network.	AS20 Roads are designed and constructed in accordance with Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring Areas and Access, Section 2.1(1).	AS20 – Complies Vehicular access will be provided into the airport via a proposed new private driveway which connects to Moray-Carmichael Road in the location described on the Concept Plan contained in Appendix A of this report. Whilst this ‘road’ will in fact be a private driveway in order to reinforce the private nature of the airport facility itself, it forms an important part of the broader project resilience strategy and will therefore enjoy all-weather access.
PC21 “Electricity transmission line easement” - Vegetation Transmission lines within an “electricity transmission line easement” are protected from vegetation.	AS21.1 Planted vegetation within an “electricity transmission line easement” has a mature height not exceeding 2.5 metres as shown in Schedule 2, Division 4: Powerline / Electricity Easements, Section 4.2 Diagram 3.	AS21 – Complies Vegetation within any proposed future electricity easement will be conditioned to be managed in accordance with the acceptable solutions stated.

	AS21.2 No part of planted vegetation, at its mature size, is located closer than 2.5 metres to an electricity transmission line as shown in Schedule 2, Division 4: Powerline / Electricity Easements, Section 4.2 Diagram 3.	
PC22 “Electricity transmission line easement” – Vegetated Buffers Vegetated buffers adjoining an “electricity transmission line easement” are maintained to provide: (a) a visual buffer to the easement; and (b) a separation distance from the easement.	AS22 Existing vegetation, comprising trees and/or shrubs, shall be retained within 20 metres of an “electricity transmission line easement” as shown in Schedule 2, Division 4: Powerline / Electricity Easements, Section 4.2 Diagram 4.	AS22 – Complies Vegetation buffers located adjacent to any proposed future electricity easement can be conditioned to be managed in accordance with the acceptable solutions stated.
PC23 “Electricity transmission line easement” - Separation Distance “Habitable buildings” and “child oriented uses” are located to ensure community safety.	AS23 “Habitable buildings” and “child oriented uses” maintain a minimum separation distance from the most proximate boundary of an “electricity transmission line easement” in accordance with Schedule 2, Division 4: Powerline / Electricity Easements, Section 4.1 (1) and Section 3.1 Diagram 1.	AS23 – Complies Whilst it is not anticipated that any ‘Habitable buildings’ or ‘child oriented use’ will be established within the nominated separation distances from any proposed future electricity easements, such separation distance can still be conditioned in accordance with the acceptable solutions stated.
Environmental		
PC24 “Watercourses” and “Lakes” “Development” ensures the maintenance of riparian areas and water quality including protection from off- site transfer of sediment.	AS24 A minimum 50 metre wide buffer area is provided extending out from the “defining bank” of any “watercourse” or “lake”. <i>Note: See diagrammatic representation of a “defining</i>	AS24 – Complies The extent of the airport facility and associated earthworks and vegetation clearing far exceeds the 50 metre separation distance to a “defining bank” of any “watercourse” or “lake”.

	<i>bank” in Schedule 3.</i>	
PC25 Vegetation Retention “Development” retains vegetation for the: (a) protection of scenic quality; (b) protection of general habitat; (c) protection of soil quality; and establishment of open space corridors and networks.	AS25 Vegetation comprising 20% of each regional ecosystem type is retained within each lot with retained vegetation made up of woody remnant, regrowth or replanted natural species, excluding deep-rooted crops and clear fell plantation forestry. The shade lines are a minimum of 10 metres in width; clumps have an area greater than 2 hectares.	AS25 – Complies No regional ecosystem vegetation is proposed to be cleared to facilitate either the airport facility or associated private access road which links it to Moray-Carmichael Road. Refer to the Operational Works (Vegetation Clearing) documentation contained in Appendix C of this report for further details.
PC26 Cultural Heritage “Development” ensures the protection and maintenance of places and items of cultural heritage.	AS26.1 A minimum separation distance of 50 metres is provided to the “defining bank” of “watercourses” and “lakes”. <i>Note: See diagrammatic representation of a “defining bank” in Schedule 3.</i> AS26.2 A minimum separation distance of 50 metres is provided to cemeteries and burial sites as identified in Schedule 2, Division 7: Places and Items of Cultural Heritage, Section 7.1.	AS26 – Complies A distance far exceeding the minimum 50 metres required will be maintained between the proposed airport and the “defining bank” of “watercourses” and “lakes”, as well as to any cemeteries and burial sites as identified in Schedule 2, Division 7: Places and Items of Cultural Heritage, Section 7.1

PC27 Air Emissions Air emissions from “premises” do not cause environmental harm or nuisance to adjoining properties or “sensitive land uses”.¹⁷	No acceptable solution is prescribed.	PC 27 - Performance Solution The operation of a private airport on the land obviously has potential to impact on the amenity of adjoining properties and/or sensitive land uses in regards to air emissions. The airport constitutes off-site infrastructure which is deemed critical to the successful operation of the Carmichael coal mine in that it will be the primary method by which workers will access the site, and will also be used as part of the goods supply chain. On that basis, the EIS process will be the authorizing mechanism by which broader issues of economic importance and overriding needs are discussed in the context of resolving potential or perceived land use conflicts. In the same regard, the EIS documentation will seek to mitigate the impacts of airport emissions on the surrounding and broader locale, hence it will be important that any operational criteria and air quality measures set in the conditions of the Coordinator General's report for the EIS are used as the basis of any conditions applied by the local authority to the proposed airport MCU.
PC28 Noise Emissions Noise emissions from “premises” do not cause environmental harm or nuisance to adjoining properties or “sensitive land uses”.¹⁸	No acceptable solution is prescribed.	PC28 – Performance Solution The operation of a private airport on the land obviously has potential to impact on the amenity of adjoining properties and/or sensitive land uses in regards to noise emissions. The airport constitutes off-site infrastructure which is deemed critical to the successful operation of the Carmichael coal mine in that it will be the primary method by which workers will access the site, and will also be used as part of the goods supply chain. On that basis, the EIS process will be the authorizing mechanism by which broader issues of economic importance and overriding needs are discussed in the context of resolving potential or perceived land use conflicts. In the same regard, the EIS documentation will seek to mitigate the impacts of airport noise emissions on the surrounding and broader locale, hence it will be important that any operational criteria and noise attenuation measures set in the conditions of the Coordinator General's report for the EIS are used as the basis of any conditions applied by the local authority to the proposed airport MCU.
PC29 Water Quality The standard of effluent and / or stormwater run-off from	No acceptable solution is prescribed.	AS29 - Complies A site based management plan addressing the proposed system of effluent disposal is included in Appendix E of this report.

“premises” ensures the quality of surface and underground water is suitable for: (a) the biological integrity of aquatic ecosystems; (b) recreational use; (c) supply as drinking water after minimal treatment; (d) agricultural use; or (e) industrial use. 19		Furthermore, a Stormwater Management Plan addressing water quality objectives is included in Appendix G of this report. These reports demonstrate that compliance with the relevant water quality objectives can be met and subsequently conditions.
PC30 Excavation or Filling Excavating or filling of land: (a) ensures safety and amenity for the users of the “premises” and nearby land; minimises soil erosion and instability of surrounding areas; and - does not degrade the environmental values of receiving waters.	AS30.1 Batters have a maximum slope of 25%, are terraced at every rise of 1.5 metres and each terrace has a minimum depth of 750mm. AS30.2 Excavation or filling within 1.5 metres of any site boundary is battered or retained by a wall that does not exceed 1 metre in height. AS30.3 The extent of filling or excavation does not exceed 40% of the site area or 500m² whichever is lesser. AS30.4 Filling and excavation is not greater than 1 metre in height or depth. AS30.5 Only clean uncontaminated fill is used (i.e. no building waste, concrete, green waste or contaminated material etc. is used as fill).	AS30 - Complies Detailed engineering design works have been undertaken as part of the preparation of this application material for the airport to inform the extent of earthworks proposed and also enable their early consideration. These design works have also been undertaken with the stormwater management strategy proposed and to ensure that appropriate finished ground conditions are established. The design strategy that underpinned the earthworks design was also heavily reliant on the flood immunity levels; appropriate fall of the runway and the intended measures to convey, capture and treat stormwater. For further information in relation to the preparatory earthworks proposed, please refer to Appendix D (OPW Bulk Earthworks).

	AS30.6 The site is not on the contaminated land register AS30.7 Any excavation or filling occurs more than 25 metres from the “defining bank” of any “watercourse” or “lake”. <i>Note: See diagrammatic representation of a “defining bank” in Schedule 3.</i> AS30.8 Excavation or filling is undertaken in accordance with Schedule 1, Division 1: Standards for Construction Activities, Section 1.1.	
PC31 Construction Activities Erosion control measures and silt collection measures ensure that environmental values are protected during construction activities.	AS31 During construction soil erosion and sediment is controlled in accordance with standards contained in Schedule 1, Division 1: Standards for Construction Activities, Section 1.1.	AS31 - Complies Erosion control and silt collection measures are proposed to be implemented during construction, as stated in the Operational Works (Bulk Earthworks) documentation contained in Appendix D of this report.

Constraint		
PC32 “Development” in the vicinity of “Airports” “Development” in the vicinity of “airports”: (a) protects the operation of the “airport”; is designed and located to achieve a suitable standard of amenity for the proposed activity; and does not restrict the future operational requirements of the “airport”.²⁰	AS32 “Buildings” and “structures” within 100 metres of the boundary of an “airport” are less than 7.5 metres in height at any point above natural ground level. (Except where establishing in an existing “building” and no “building works” are being undertaken for that existing “building”.)	AS32 - Complies Both the proposed Concept Plan for the airport and the broader planning framework to be established illustrate that there will be no potential for buildings exceeding the nominated 7.5 metre height to be constructed within the designated 100 metres distance.
PC33 Good Quality Agricultural Land Areas Good quality agricultural land areas as identified on the Land Characteristics Map – Good Quality Agricultural Land are conserved and managed for the longer term and protected from development that may lead to its alienation or diminished productivity.²¹	No acceptable solution is prescribed.	PC33 – Performance Solution The subject site has traditionally been associated with grazing related agricultural operations and as such, any departure from this historical use requires careful consideration. On a project wide (macro scale), the land to be used for the mine and off-site infrastructure items is being considered as a whole and is to be dealt with on a project wide scale. This consideration includes aspects of varied land uses and applicable offsets/integration policies. At the level of the proposed use (micro scale), the use of the identified location for an airport use represents less than 0.1% of the existing land mass of the Moray Downs property. In this regard, it is not considered that this airport use will compromise or fragment the remaining agricultural use of the site and surrounds.
PC34 Flooding “Premises” are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and not to have an undesirable impact on the extent or magnitude of flooding.²²	No acceptable solution is prescribed.	PC34 - Complies The proposed airport facility has been located clear of known historic floodways.
PC35 Protected Areas “Development” is undertaken to ensure areas of significant	AS35 A minimum separation distance of 100 metres is provided to	AS35 - Complies The proposed airport is located greater than 100 metres from the nearest protected area’ shown on the ‘Land Characteristics Map – Features Map’, being

biodiversity and habitat value and high scenic quality are protected.	protected areas as identified on Land Characteristics Map – Features Map.	Doongmabulla Springs to the west.
PC36 Sloping Land “Development” is undertaken to ensure: vulnerability to landslip, erosion and land degradation is minimised; and safety of persons and property is not compromised.	AS36 “Development” is not undertaken on slopes greater than 15%.	AS36 - Complies The site of the proposed airport is essentially flat, and therefore well below the nominated maximum 15% slope.
PC37 Transport Infrastructure Separation distances are provided to ensure: transport infrastructure items are protected from incompatible “development”; and an appropriate standard of amenity and public safety is provided to adjoining “uses”.	AS37 “Buildings” and “structures” maintain a minimum separation distance to rail lines and State controlled roads (as identified on Land Characteristics Map – Features Map) as stated in Schedule 2, Division 5: Separation Distances – Infrastructure Items, Section 5.1).	AS37 - Complies All proposed “buildings” and “structures” related to the airport will be located far in excess of the separation distances from rail and State controlled road infrastructure nominated on the Land Characteristics Map – Features Map.
PC38 Aviation Facilities Aviation facilities are protected from physical obstructions and electromagnetic emissions that may adversely affect their function.	AS38.1 “Development” is not undertaken within 150 metres of the NDB as identified on Land Characteristics Map – Aviation Facilities and in accordance with Schedule 2, Division 8: Sensitive Areas for Aviation Facilities, Diagram 1. For “development” between 150 metres and 500 metres of the NDB: AS38.2 “Buildings” and “structures” do not intersect the 3° plane extending from the NDB as identified on Land Characteristics Map – Aviation Facilities and in accordance with Schedule 2,	AS38 - Complies The proposed development is not located in Clermont, therefore is outside of the specified distances from the NDB.

	Division 8: Sensitive Areas for Aviation Facilities, Diagram 1.	
“Use”		
PC39 “Airport” “Airport” activities: do not adversely impact on the amenity of surrounding residents; (b) ensure the safe operation of aeronautical and support activities; and (c) ensure the safety of surrounding “Premises”. 23	No acceptable solution is prescribed.	PC39 – Performance Solution The establishment and operation of a private airport on the land obviously has potential to impact on the amenity and safety of surrounding residents. The airport constitutes off-site infrastructure which is deemed critical to the successful operation of the Carmichael coal mine in that it will be the primary method by which workers will access the site, and will also be used as part of the goods supply chain. On that basis, the EIS process will be the authorizing mechanism by which broader issues of economic importance and overriding needs are discussed in the context of resolving potential or perceived land use conflicts. In the same regard, the EIS documentation will seek to mitigate the impacts of airport air and noise emissions on the surrounding and broader locale, hence it will be important that any operational criteria and noise attenuation measures set in the conditions of the Coordinator General’s report for the EIS are used as the basis of any conditions applied by the local authority to the proposed airport MCU. From a safety perspective, the scale and status of the airport will mean that a separate registration and certification process will need to be completed with the appropriate federal regulatory bodies post land use approval before flights can commence.
PC40 “Bed and Breakfast Premises” “Premises” used for a “bed and breakfast premises” are of a scale and are operated in a manner so as not to impact adversely on the amenity of the locality.	AS40.1 Provision is made for no more than 6 (six) paying guests to be accommodated at any one time. AS40.2 “Premises” contains not more than 3 (three) “accommodation units” for guest accommodation purposes.	Not Applicable No bed and breakfast premises use is proposed in conjunction with the airport use.
PC41 “Extractive Industry” “Premises” used for “extractive industries”: (a) do not impact adversely on the amenity of other	No acceptable solution is prescribed.	Not Applicable No Extractive Industry use is proposed in conjunction with the airport use.

“uses” in the Rural “Zone” or other “zones”; (b) are designed and operated to ensure the protection and maintenance of environmental values; are rehabilitated to provide for future re-use of the land and to prevent ongoing risk of adverse impacts on the local environment and amenity; and are designed and operated so that the safety of persons and property is not compromised.		
PC42 “Home Business” “Premises” used for a “home business” are of a scale and are operated in a manner so as not to impact adversely on the amenity of the locality.	AS42.1 No more than 1 (one) person other than the residents of the “premises” is employed in the “home business”. AS42.2 No more than 150m² of “total use area” is used for the purposes of a “home business”. AS42.3 No more than 2 (two) clients normally attend the “premises” at any one time. AS42.4 No goods or products produced by other businesses are displayed for sale in any window or outdoor area. AS42.5 Operate only between the hours of 7:00am and 6:00pm.	Not Applicable No home business use is proposed in conjunction with the airport use.
C43 “Intensive Animal Industries” “Intensive animal industries”:	No acceptable solutions prescribed.	Not Applicable No intensive animal industry use is proposed in conjunction with the airport use.

(a) do not impact adversely on the amenity of the Rural "Zone", and surrounding areas; are designed and operated to ensure the protection and maintenance of environmental values; and are rehabilitated to provide for future re-use of the land and to prevent ongoing risk of adverse impacts on the local environment and amenity.		
PC44 "Caravan and Relocatable Home Park" or "Accommodation Building") Development for the purposes of accommodating workers is: on the same site as, or is immediately adjoining, the rural production or natural resource related industry with which it is associated; and is established only for a defined period; and) Development for the purposes of accommodating tourists is of a small scale.	No acceptable solution is prescribed.	Not Applicable No caravan, relocatable home park or accommodation building use is proposed in conjunction with the airport use.

Appendix C: OPW Vegetation Clearing



Vegetation Management Plan: Airport

17th July 2013

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In preparing this report we have made certain assumptions. We have assumed that all information and documents provided to us by the Client or as a result of a specific request or enquiry were complete, accurate and up-to-date. Where we have obtained information from a government register or database, we have assumed that the information is accurate. Where an assumption has been made, we have not made any independent investigations with respect to the matters the subject of that assumption. We are not aware of any reason why any of the assumptions are incorrect.

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GDP Document Control

Originating Office:	Brisbane	Job Number:	5370
Physical Address:	Level 8, 97 Creek St QLD 4000	Job Name:	Adani Mining Pty Ltd
Postal Address:	GPO Box 999 BRISBANE.Q. 4001	Project Manager:	Gary Savins
Phone:	+61 7 3221 6732	Document Title:	Vegetation Management Plan
Fax:	+61 7 3221 7308	Author:	Mark Spears
Email:	mail@gassman.com.au	Client:	Adani Mining Pty Ltd
Web:	www.gassman.com.au	Client Contact:	Melinda Bergmann
		Client Ref:	AMPL_MINE_SO_2013_821_R0

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Executive Summary

Gassman Development Perspectives have been commissioned to complete and compile the necessary application material for inclusion within the Supplementary Environmental Impact Statement (SEIS) for the Carmichael Coal Mine and Rail Project (the Project) for a number of offsite infrastructure items. The aim of this approach is to ideally minimise overall assessment timeframes following determination of the project wide Environmental Impact Statement (EIS).

This application provides the necessary details and measures proposed to facilitate the required vegetation removal for the proposed airport.

This report builds upon the detailed and location-specific environmental reporting that has been completed for the project, including the chosen location for the airport.

The information contained within this report will ensure that all vegetation clearing occurs in compliance with the relevant Australian Standards and best practice methodologies.

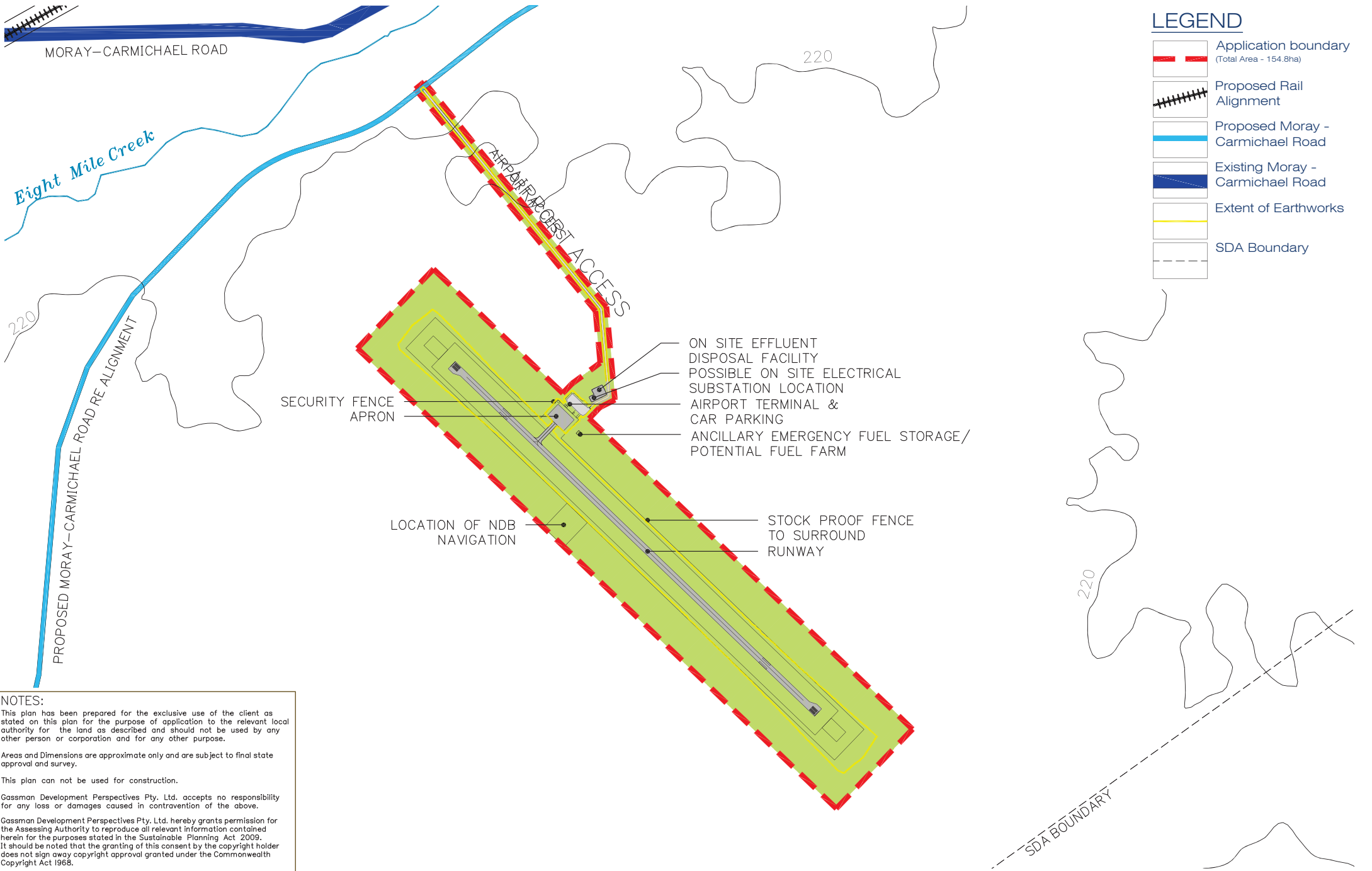
1.0 Introduction

1.1 Background

This Vegetation Management Plan (VMP) has been prepared to support an operational works application for vegetation removal. This proposal is for the construction of an airport facility and associated infrastructure including an access road. The proposed development is shown in the Proposal Plan overleaf.

The principle intention of this VMP to appropriately reflect the current status of vegetation on the site, its location, management and treatment in relation to removal, retention, protection, relocation, propagation, treatment and enhancement.

Remnant vegetation mapping provided by the Department of Natural Resources and Mines (DNRM) indicates that a portion of the access road to the airport facility traverses an area of 'of concern' remnant Regional Ecosystem 11.4.11/11.4.5. However, ground truthing exercises undertaken by ecologists from GHD have indicated that this mapping is not accurate and that this road will not disturb any remnant vegetation. The Property Map of Assessable Vegetation (PMAV) application prepared by GHD has been included in **Appendix A** to this report. This PMAV application addresses the requirements for applications made under the *Vegetation Management Act 1999*.



LEGEND

- Application boundary (Total Area - 154.8ha)
- Proposed Rail Alignment
- Proposed Moray - Carmichael Road
- Existing Moray - Carmichael Road
- Extent of Earthworks
- SDA Boundary

NOTES:

This plan has been prepared for the exclusive use of the client as stated on this plan for the purpose of application to the relevant local authority for the land as described and should not be used by any other person or corporation and for any other purpose.

Areas and Dimensions are approximate only and are subject to final state approval and survey.

This plan can not be used for construction.

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gassman
development
perspectives

planning
design
environment
surveying

Brisbane Office
Level 8
97 Creek Street Brisbane Q. 4000
t: (07) 32216732
f: (07) 32217308
e: mail@gassman.com.au
w: www.gassman.com.au



MCU Airport
Proposal Plan | Airport

AMENDMENT DETAILS		DATE
A M E N D M E N T S	F	
	E	
	D	
	C	
	B	
S	B	
	A	
FINAL ISSUE		16-07-2013
Scale 1:15 000 - Lengths are in Metres		
0 200 400 600 800 1000 1200		

date: 16-07-13
scale: 1:15 000 @ A3
design: PC/IAS
plan: 5370 P A PP 01 A

2.0 VMP Provisions

This VMP has been prepared to cover the following aspects of vegetation management:

- The location of the vegetation subject to this application, indicating which vegetation is proposed to be retained, relocated, removed or damaged;
- Remnant or non-remnant status of the vegetation to be removed;
- Vegetation management strategies including:
 - o Vegetation protection
 - o Reuse of felled Vegetation
 - o Disposal methods for remaining debris
 - o The vegetation proposed to remain on site is in locations that will not hinder works or pose safety issues.

It is intended that all retained vegetation outside of the proposed development footprint will remain to provide landscape features, ecological functions, habitat corridors, visual significance and buffers, as well as to maintain the character of the area and assist in the conservation of biodiversity in the region.

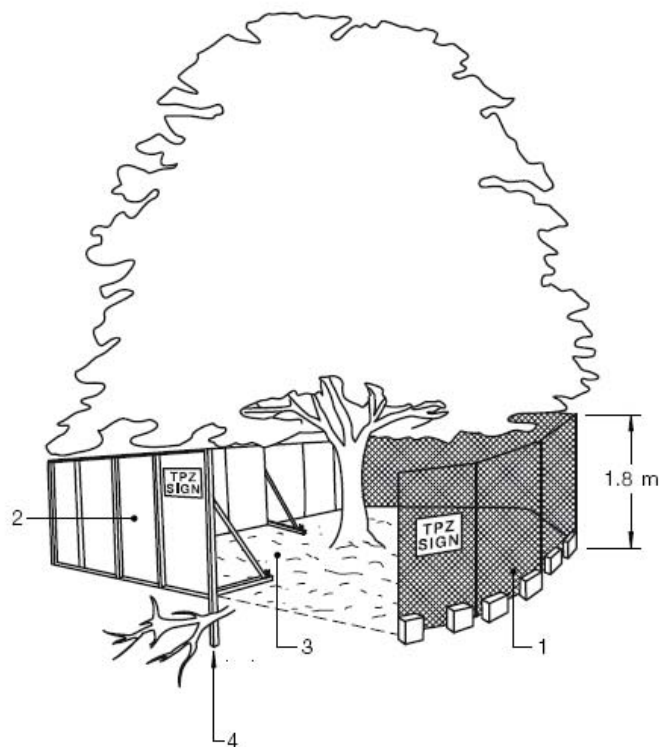
3.0 VMP Objectives

- To identify type and location of the site's existing vegetation;
- Identify existing vegetation to be retained and protected;
- To identify and locate existing vegetation required for removal;
- To provide a specific method of tree clearance that will minimise impact on the surrounding ecology;
- To provide information for the protection of existing vegetation to be retained;
- To provide sustainable reuse methods for the felled vegetation; and
- To limit any possible erosion from vegetation clearing practices.

3.1 Vegetation Protection

Vegetation outside of the allocated clearance areas will be protected from on site clearing and construction activities by incorporating the following procedures:

- 1) The trees that fall outside of the allocated tree clearance area will be protected by the provision of a hard standing steel fence (**Figure 2**) as per Australian Standard AS 4970-2009 (Protection of Trees on Development Sites) where appropriate. Groups of trees can be protected in the same way with a continuous hard steel fence. In situations where the extent of clearing is such that hard standing steel fence is not feasible or appropriate to install, orange mesh fencing supported by steel pickets will instead be utilised.



LEGEND:

- 1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
- 2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
- 3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
- 4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

Figure 1: Tree Protection (source – AS4970 – Protection of Trees on Development Sites)

- 2) All machine operators conducting the tree clearing process are to be provided with a copy of the approved Tree Clearing Plan.
- 3) No site sheds, parking areas or buildings are located outside the clearing area.
- 4) The area surrounding the tree for removal is clear of any hazards and maintains adequate room to safely conduct the removal.
- 5) The vegetation removal process has focused on providing environmentally sensitive and sustainable practices. These include:

- Possible fauna removal if required;
 - Reuse of felled material for on the site use.
- 6) The following activities are prohibited to occur within the vegetation protection zones or drip-lines of trees marked for retention:
- Machinery or vehicle parking;
 - Disposal of liquids of any type;
 - Repairs or refuelling;
 - Earthworks;
 - Temporary sheds;
 - Stockpiling (Refer to section 3.7).

3.2 Vegetation to be Removed

154.8 hectares of non-remnant vegetation located in the areas required to accommodate the bulk earthworks will require removal as identified by field exercises conducted by GHD ecologists (**Appendix B**). No remnant vegetation was identified as occurring within the development footprint of the airport.

3.2.1 Reasons for Vegetation Removal

- To facilitate the approved Bulk Earthworks.
- Site access/Roads/Driveways.
- Safety for future property uses.
- Area for ancillary use of the site and landscaping.

3.2.2 Tree Clearing Process:

1. Locate and ensure the trees that have been protected in accordance with the procedures outlined in **Section 3.1** of this report.
2. Woodchip the felled vegetation on site.

3. Stockpile the wood-chipped vegetation in allocated areas indicated on the Tree Clearing Plan, in accordance with **Section 3.7** of this report.
4. Stump grind remains or remove from ground with excavator.

3.3 Corrective Actions

If vegetation not identified for removal is disturbed during the bulk earthworks process, then discussions with Council environmental officers will be required to identify any needs for additional rehabilitation to compensate for the tree damage or removal.

If a retained tree shows signs of ill health, then the causes are to be identified and amelioration methods are to be discussed with council.

3.4 Reuse of Felled Vegetation

Any wood chipped vegetation should be reused on the site for future landscape and site stabilisation purposes. To achieve satisfactory mulch, material pasteurization is the minimum process required to achieve weed and pathogen free mulch from the chipping process.

The vegetation proposed for wood chipping should be weed free and will therefore pose little threat from contaminants. Stockpiles of mulch will need to be maintained at 55°C for three weeks to produce conditions to kill possible pathogens. Longer periods will not damage the material, however occasional turning of the stockpile will limit decomposition of the mulch.

3.5 Stockpiles

- Stockpiles are not to be located within 30 meters from the surrounding adjacent vegetation.
- Stockpiles are not to be located in areas allocated for road constructions.
- Stockpiles are not to be located in any areas with difficult access or on steep slopes.
- Stockpiles are not to exceed 3000mm in height.

3.6 Fauna Provisions

It is recommended that a suitably qualified fauna spotter/catcher be engaged to identify any habitat features encountered throughout the clearing works. When identified, the spotter/catcher will direct the clearing operator to pause operations to enable to rescue of injured or displaced wildlife. The fauna spotter/catcher should be present on site during all vegetation clearing works. Any injured wildlife should be captured and transported to the nearest veterinary clinic if practical, but due to the remoteness of the clearing area, it may be more feasible to perform humane euthanasia on site using methods outlined in the ANZCCART publication entitled “Euthanasia of Animals Used for Scientific Purposes.”

4.0 Landscaping Requirements

Landscaping on the site after the construction works are complete will focus on the existing and desired species for the area, utilising existing seed stock and plants endemic to the region where available.

Also incorporated into the landscaping should be suitable native species that are suited to specialised landscape requirements. The design focused on creating potential for ecological links with local systems and sustainable vegetation.

5.0 Invasive Weed Management

5.1 Objectives

- To reduce the extent of weed species that are currently threatening or pose future threats to diversity levels and ecological processes within the region; and
- To remove present weed species from the subject site.

Table 1: General Guidelines for weed removal

Vegetation Type	Removal and control methods
Vines	The vine should be cut at the base and physically remove root system, if this is not possible paste cut stem with herbicide. The upper parts of the vine should be left insitu to decay and not pulled from host tree as it will cause leaf loss and branch damage
Soft Weeds	The soft weeds should be removed by hand and disposed from site where possible or sprayed with a targeted herbicide application.
Woody Weeds	To be removed by hand and or machine where possible and disposed from site or sprayed with a targeted herbicide application, strong or developed species may required cut and paste of the stem.
Trees	Where machine access is available trees should be lopped and stumped grinded in accordance with the vegetation management procedures ensuring safety and clear access, smaller trees under 20mm can be lopped at base and treated immediately with a 1:1 mixture of Glyphosate or recommended herbicide for that specific tree. Larger trees should be drilled at a downward angle into xylem / phloem of the tree and left standing in situ.

5.2 Performance Criteria

- All targeted tree weed species have been removed from the subject site
- No erosion or re-growth of the weed species is evident

5.3 Corrective Actions

Re-apply procedures and actions to eradicate weed re-establishment within the area.

6.0 Erosion and Sediment Control

Erosion and sediment control measures will be installed onsite prior to the commencement of clearing operation. This should include sediment fencing around the clearance area to reduce sediment loading into nearby waterways and erosion once clearing of the site commences until completion and the site is re-stabilised.

A Sediment and Erosion Control Management Plan will be prepared and submitted by a suitably qualified engineering consultant.

7.0 Summary of Performance Indicators

1. Vegetation removal was restricted to footprint of Airport Precinct.
2. Vegetation that remains outside this area is not disturbed.
3. A suitably qualified fauna spotter catcher was present for all clearing operations.
4. Fauna was dispersed or relocated to suitable locations.
5. Abundance of weed species within the area was reduced.
6. No increased erosion or sediment loss occurred from site as a result of the vegetation clearing.
7. Felled vegetation has been wood-chipped and stockpiled.

8.0 Conclusion

This Vegetation Management Plan (VMP) has been prepared to guide contractors in best practice methodology for the removal of vegetation to facilitate the future construction of an airport and associated infrastructure.

The plan has identified the vegetation that will require protection during the construction process to ensure no damage occurs. It also has identified vegetation which is required to be removed and has described methods to carry out these works.

Other sustainable planning allocations have been made which include having a suitably qualified fauna spotter catcher present during all stages of clearing, protective fencing, felling and the reuse of felled material onsite.

The above specifications and management plans have been included with the graphic plans to provide the necessary information for council officers to enable them to make a reasonable assessment of the proposed actions and the procedures in relation to the vegetation management and clearing procedures to be undertaken for the removal of vegetation from the subject site.

Appendix A: PMAV Application prepared by GHD



Summary:

Site condition measured as moderate (VAST 3), with weed encroachment and some cattle disturbance recorded throughout the study area

Site is proposed as non-remnant

Plant Species

Str.	Rel. ¹	Scientific name	Common name
S1	D	<i>Atalaya hemiglauca</i>	cattle bush
S2	D	<i>Vachellia farnesiana</i> *	mimosa bush
S2	A	<i>Capparis mitchellii</i>	bumble tree
S2	A	<i>Atalaya hemiglauca</i>	cattle bush
S2	A	<i>Lysiphyllum carronii</i>	red bauhinia
S2	A	<i>Acacia harpophylla</i>	brigalow
S2	A	<i>Santalum lanceolatum</i>	sandalwood
G	D	<i>Cenchrus ciliaris</i> *	buffel grass
G	A	<i>Parthenium hysterophorus</i> *	parthenium
G	A	<i>Desmodium sp.</i>	
G	A	<i>Neptunia gracilis</i>	native sensitive plant
G	A	<i>Aster sp.</i>	
G	A	<i>Sida cordifolia</i> *	flannel weed
G	A	<i>Tephrosia supina</i>	
G	A	<i>Bulbine bulbosa</i>	native leek
G	A	<i>Stemodia glabella</i>	smooth bluerod
G	A	<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>	forest bluegrass
G	A	<i>Sida trichopoda</i>	high sida

¹Rel. = Relative dominance: D, dominant; C, codominant; S, subdominant; A, associated

*indicates a non-native species

Vegetation DBH – Not applicable to vegetation community

Plate 17 Vegetation assessment polygon 20



Of concern to of concern

Polygon 21 (Vegetation assessment site 46)

Mapped RE: Of concern, 11.4.11/11.4.5 (90/10)

Observed RE: Of concern 11.4.6 (100)

Polygon No.:	21	Recorder:	Peter Wagner	Date:	05/05/2013
Purpose:	Regional ecosystem verification assessment				
Locality:	Lot 662 PH1491 Isaac Regional Council				

Stratum	Median height (m)	Height interval (m)	Est. cover density (D, M, S, V)
E			
T1	10	8 – 12	Mid-dense
T2	6.5	6 – 8	Sparse
T3			
S1	2	1 – 4	Very sparse
S2			
G	0.6	0 - 1	Mid-dense
Structural formation:	Remnant open-forest		
Ecologically dominant layer:	T1		

Transect – Crown Cover Measured (Transect intercept method)

GPS coordinates:	Datum:	MGA55	Transect length (m):	100
Start point:	Zone	5 5	E 446260	N 7569600
50 m point:	Zone	5 5	E 446202	N 7569601

Interval (m)	Intercept (m)	Stratum	Scientific name	Common name
0 – 4.8	4.8	T1	<i>Acacia cambagei</i>	gidgee
2.0 – 3.1	1.1	S1	<i>Geijera parviflora</i>	wilga
4.1 – 8.6	4.5	T2	<i>Acacia cambagei</i>	gidgee
5.5 – 6.7	1.2	S1	<i>Santalum lanceolatum</i>	sandalwood
10 – 25.5	15.5	T1	<i>Acacia cambagei</i>	gidgee
27.1 – 28.0	0.9	S1	<i>Eremophila mitchellii</i>	false sandalwood
30.0 – 44.6	14.6	T1	<i>Acacia cambagei</i>	gidgee
45.2 – 46.3	1.1	T2	<i>Lysiphyllum carronii</i>	red bauhinia
51.3 – 64.2	12.9	T2	<i>Acacia cambagei</i>	gidgee
55.2 – 56.5	1.3	S1	<i>Eremophila mitchellii</i>	false sandalwood
65.3 – 68.4	3.1	T1	<i>Acacia cambagei</i>	gidgee
66.2 – 68.6	2.4	T2	<i>Lysiphyllum carronii</i>	red bauhinia
71.3 – 80.5	9.2	T2	<i>Acacia cambagei</i>	gidgee
85.1 – 98.6	13.5	T2	<i>Acacia cambagei</i>	gidgee
82.3 – 86.3	4.0	T1	<i>Acacia cambagei</i>	gidgee



Summary:

Intercept of EDL 0 – 50m:	34.9 m
Intercept of EDL 50 – 100 m:	7.1 m
Measured crown cover % of EDL 0 – 100 m:	42.0
Structural formation:	Remnant open-forest

Conclusions/notes:

Structure meets remnant status

Species not consistent with endangered RE polygon 11.4.11/11.4.5; species and community structure not consistent with 11.4.5 and 11.4.11.

Site condition measured as moderate (VAST 2), with weed encroachment and some cattle disturbance recorded throughout the study area

Site is proposed as of concern RE 11.4.6 (100)

Plant Species

Str.	Rel. ¹	Scientific name	Common name
T1	D	<i>Acacia cambagei</i>	gidgee
T1	A	<i>Lysiphyllum carronii</i>	red bauhinia
T2	D	<i>Acacia cambagei</i>	gidgee
T2	A	<i>Lysiana sp.</i>	
S1	D	<i>Eremophila mitchellii</i>	false sandalwood
S1	A	<i>Santalum lanceolatum</i>	sandalwood
S1	A	<i>Geijera parviflora</i>	wilga
S1	A	<i>Carissa ovata</i>	currant bush
G	D	<i>Cenchrus ciliaris</i> *	buffel grass
G	A	<i>Parthenium hysterophorus</i> *	parthenium
G	A	<i>Sida cordifolia</i> *	flannel weed

¹Rel. = Relative dominance: D, dominant; C, codominant; S, subdominant; A, associated

*indicates a non-native species

Vegetation DBH – Not available for vegetation community

Plate 18 Vegetation assessment polygon 21





Least concern to least concern

Polygon 3 (Vegetation assessment site 3) and representative of Polygons 1, 2 and 8

Mapped RE: Least concern, 10.3.4b/10.3.3b/10.3.6a (80/10/10)

Observed RE: Least concern, 10.3.6a (100)

Polygon No.:	3	Recorder:	Jessica Newton	Date:	03/05/2013
Purpose:	Regional ecosystem verification and BioCondition assessment				
Locality:	Lot 662 PH1491 Isaac Regional Council				

Stratum	Median height (m)	Height interval (m)	Est. cover density (D, M, S, V)
E			
T1	11	8 – 13	Mid-dense
T2	Absent	Absent	Absent
T3			
S1	5	4-7	Sparse
S2	1.5	1-2	Sparse
G	0.7	0-1	Mid-dense
Structural formation:	Remnant eucalypt open-woodland		
Ecologically dominant layer:	T1		

Transect – Crown Cover Measured (Transect intercept method)

GPS coordinates:	Datum	MGA55	Transect length (m):	100
Start point:	Zone	5 5 E	439703	N 7570525
50 m point:	Zone	5 5 E	439678	N 7570569

Interval (m)	Intercept (m)	Stratum	Scientific name	Common name
0 - 1	1.0	T1	<i>Eucalyptus brownii</i>	Reid River box
9.1 – 13.5	4.4	T1	<i>Eucalyptus brownii</i>	Reid River box
18.4 – 32.4	14.0	T1	<i>Eucalyptus brownii</i>	Reid River box
39.9 – 41.1	1.2	S1	<i>Acacia excelsa subsp. excelsa</i>	ironwood
50.5 – 53.1	2.5	T1	<i>Eucalyptus coolabah</i>	Coolabah
51.1 - 62.7	11.6	T1	<i>Eucalyptus brownii</i>	Reid River box
58.5 – 59.0	0.5	S2	<i>Acacia excelsa subsp. excelsa</i>	ironwood
60.3 – 62.9	2.6	T1	<i>Eucalyptus brownii</i>	Reid River box
63.8 – 66.0	2.2	T1	<i>Eucalyptus brownii</i>	Reid River box
69.8 – 71.0	1.4	T1	<i>Eucalyptus brownii</i>	Reid River box
73.6 – 83.8	10.2	T1	<i>Eucalyptus brownii</i>	Reid River box
83.9 – 86.5	2.6	S2	<i>Acacia excelsa subsp. excelsa</i>	ironwood
95.0 –	5.0	T1	<i>Eucalyptus coolabah</i>	coolabah



Interval (m)	Intercept (m)	Stratum	Scientific name	Common name
100.0				

Summary:

Intercept of EDL 0 – 50m:	19.4 m
Intercept of EDL 50 – 100 m:	35.4 m
Measured crown cover % of EDL 0 – 100 m:	54.9
Structural formation:	Remnant eucalypt open-woodland
Conclusions/notes:	
Structure meets remnant status	
Species consistent with least concern RE 10.3.6a; no species consistent with the least concern REs 10.3.3 or 10.3.3 were recorded within the remnant polygon	
Site condition measured as moderate (VAST 2), with some cattle disturbance recorded throughout the study area.	
Site is proposed as least concern RE 10.3.6a	

Plant Species

Str.	Rel. ¹	Scientific name	Common name
T1	D	<i>Eucalyptus brownii</i>	Reid River box
T1	S	<i>Eucalyptus coolabah</i>	coolabah
T1	A	<i>Grevillea striata</i>	beefwood
T1	A	<i>Eucalyptus moluccana</i>	Silver-leaved ironbark
T1	A	<i>Corymbia clarksoniana</i>	Clarkson's bloodwood
S1	D	<i>Acacia excelsa subsp. excelsa</i>	ironwood
S1	A	<i>Pittosporum spinescens</i>	wallaby apple
S1	A	<i>Grevillea striata</i>	beefwood
S2	D	<i>Carissa lanceolata</i>	conkerberry
S2	A	<i>Grewia retusifolia</i>	dog's balls
S2	S	<i>Acacia excelsa subsp. excelsa</i>	ironwood
S2	A	<i>Capparis mitchellii</i>	bumble tree
S2	A	<i>Citrus glauca</i>	wild lime
S2	A	<i>Acacia bidwillii</i>	corkwood wattle
G	D	<i>Cenchrus ciliaris*</i>	buffel grass
G	S	<i>Aristida calycina var. calycina</i>	dark wiregrass
G	A	<i>Chrysopogon fallax</i>	golden beard grass
G	A	<i>Abutilon fraseri</i>	dwarf lantern flower
G	A	<i>Cyanthillium cinereum</i>	vernonia
G	A	<i>Rostellularia adscendens var. hispida</i>	pink tongues
G	A	<i>Heteropogon contortus</i>	black spear grass
G	A	<i>Stylosanthes scabra*</i>	stylo
G	A	<i>Commelina diffusa</i>	wandering jew
G	A	<i>Pterocaulon sphacelatum</i>	fruit salad plant

¹Rel. = Relative dominance: D, dominant; C, codominant; S, subdominant; A, associated

*indicates a non-native species

Vegetation DBH (from BioCondition Assessment)



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Scientific name	Common name	DBH (mm)	Average DBH (mm)
Eucalypts			
Eucalyptus brownii	Reid River box	375	375
Eucalyptus coolabah	coolabah	540, 420, 410	457
Corymbia clarksoniana	Clarkson's bloodwood	530	530
Average DBH for eucalypts:			455

Plate 19 Vegetation assessment polygon 3





Polygon 4 (Vegetation assessment site 15) and representative of Polygon 6

Mapped RE: Least concern, 10.3.4b/10.3.6a/10.3.3b/10.3.3a (40/40/10/10)

Observed RE: Least concern, 10.3.6a/10.3.14 (70/30)

Polygon No.:	4	Recorder:	Jessica Newton	Date:	03/05/2013
Purpose:	Regional ecosystem verification and BioCondition assessment				
Locality:	Lot 662 PH1491 Isaac Regional Council				

Stratum	Median height (m)	Height interval (m)	Est. cover density (D, M, S, V)
E			
T1	15	13 – 16	Sparse
T2	10	7 – 12	Mid-dense
T3			
S1	5	3.5 – 6	Mid-dense
S2	2	1 – 3	Mid-dense
G	0.6	0 – 1	Dense
Structural formation:	Remnant eucalypt open-woodland		
Ecologically dominant layer:	T1		

Transect – Crown Cover Measured (Transect intercept method)

GPS coordinates:	Datum:	MGA55	Transect length (m):	100
Start point:	Zone	5 5	E 440739	N 7574056
50 m point:	Zone	5 5	E 440711	N 7574097

Interval (m)	Intercept (m)	Stratum	Scientific name	Common name
15.3 – 25.6	10.3	T2	<i>Eucalyptus brownii</i>	Reid River box
31.0 – 37.8	6.8	T1	<i>Eucalyptus brownii</i>	Reid river box
56.1 – 57.3	1.2	T2	<i>Lysiphyllum carronii</i>	red bauhinia
96.2 - 100	3.8	T2	<i>Eucalyptus brownii</i>	Reid River box

Summary:

Intercept of EDL 0 – 50m:	6.8 m
Intercept of EDL 50 – 100 m:	0.0 m
Measured crown cover % of EDL 0 – 100 m:	6.8
Structural formation:	Remnant eucalypt open-woodland
Conclusions/notes:	
Structure meets remnant status	
Species consistent with least concern RE 10.3.6a and 10.3.14; no species consistent with the least concern REs 10.3.4b, 10.3.3a or 10.3.3b were recorded within the remnant polygon	
Site condition measured as moderate (VAST 2), with some cattle disturbance recorded throughout the study area.	
Site is proposed as least concern RE 10.3.6a/10.3.14 (70/30)	



Plant Species

Str.	Rel. ¹	Scientific name	Common name
T1	D	<i>Eucalyptus brownii</i>	Reid River box
T1	S	<i>Eucalyptus camaldulensis</i> var. <i>obtusa</i>	river red gum
T2	D	<i>Eucalyptus brownii</i>	Reid River box
T2	A	<i>Acacia excelsa</i> subsp. <i>excelsa</i>	ironwood
T2	A	<i>Lysiphyllum carronii</i>	red bauhinia
S1	D	<i>Acacia excelsa</i> subsp. <i>excelsa</i>	ironwood
S1	A	<i>Grevillea striata</i>	beefwood
S1	A	<i>Terminalia oblongata</i>	yellow wood
S1	A	<i>Lysiphyllum carronii</i>	red bauhinia
S1	A	<i>Atalaya hemiglauca</i>	cattle bush
S2	A	<i>Pittosporum spinescens</i>	wallaby apple
S2	A	<i>Acacia excelsa</i> subsp. <i>excelsa</i>	ironwood
S2	A	<i>Citrus glauca</i>	wild lime
S2	A	<i>Capparis lasiantha</i>	wait-a-while
S2	A	<i>Opuntia tomentosa</i> *	velvety tree pear
S2	A	<i>Grewia retusifolia</i>	dog's balls
S2	A	<i>Carissa lanceolata</i>	conkerberry
S2	A	<i>Eremophila mitchellii</i>	false sandalwood
S2	A	<i>Capparis canescens</i>	Wild orange
G	A	<i>Abutilon fraseri</i>	dwarf lantern flower
G	A	<i>Aristida calycina</i> var. <i>calycina</i>	dark wiregrass
G	D	<i>Cenchrus ciliaris</i> *	buffel grass
G	A	<i>Urochloa mosambicensis</i> *	
G	A	<i>Enneapogon gracilis</i>	slender bottlewashers
G	A	<i>Sida cordifolia</i> *	flannel weed

¹Rel. = Relative dominance: D, dominant; C, codominant; S, subdominant; A, associated

*Indicates a non-native species

Vegetation DBH (from BioCondition Assessment)

Scientific name	Common name	DBH (mm)	Average DBH (mm)
Eucalypts			
<i>Eucalyptus brownii</i>	Reid River box	530, 310	420
Average DBH for eucalypts:			
<i>Lysiphyllum carronii</i>	red bauhinia	330	330
Average DBH for non-eucalypts:			
330			

Plate 20 Vegetation assessment polygon 4





Polygon 5 (Vegetation assessment site 26)

Mapped RE: Least concern, 10.4.5/10.4.3a (95/5)

Observed RE: Least concern, 10.4.5 (100)

Polygon No.:	5	Recorder:	Jessica Newton	Date:	05/05/2013
Purpose:	Regional ecosystem verification and BioCondition assessment				
Locality:	Lot 662 PH1491 Isaac Regional Council				

Stratum	Median height (m)	Height interval (m)	Est. cover density (D, M, S, V)
E			
T1	12	8 – 15	Sparse
T2	Absent	Absent	Absent
T3			
S1	5	3 – 6	Mid-dense
S2	1.5	1 – 3	Sparse
G	0.6	0 – 1	Mid-dense
Structural formation:	Remnant acacia open-forest		
Ecologically dominant layer:	T1		

Transect – Crown Cover Measured (Transect intercept method)

GPS coordinates:	Datum:	MGA55	Transect length (m):	100
Start point:	Zone	5 5 E 441389	N 7572255	
50 m point:	Zone	5 5 E 441347	N 7572237	

Interval (m)	Intercept (m)	Stratum	Scientific name	Common name
2.2 – 2.5	0.3	S2	<i>Carissa lanceolata</i>	conkerberry
3.9 – 4.7	0.8	S2	<i>Carissa lanceolata</i>	conkerberry
8.6 – 15.5	6.9	S1	<i>Eremophila mitchellii</i>	false sandalwood
15.6 – 18.0	2.4	T1	<i>Acacia cambagei</i>	gidgee
19.4 – 20.4	1.0	S2	<i>Carissa lanceolata</i>	conkerberry
24.5 – 30.0	5.5	S1	<i>Casuarina cristata</i>	belah
30.6 – 34.0	3.4	T1	<i>Acacia cambagei</i>	gidgee
33.1 – 35.2	2.1	S1	<i>Santalum lanceolatum</i>	sandalwood
36.2 – 39.8	3.6	T1	<i>Acacia cambagei</i>	gidgee
36.7 – 42.6	5.9	S1	<i>Eremophila mitchellii</i>	false sandalwood
60.0 – 69.2	9.2	T1	<i>Acacia cambagei</i>	gidgee
44.4 – 47.5	3.1	S1	<i>Terminalia oblongata</i>	yellow wood
50.5 – 54.4	3.9	S1	<i>Acacia cambagei</i>	gidgee
65.2 – 69.2	4.0	S2	<i>Eremophila mitchellii</i>	false sandalwood
85.1 – 87.9	2.8	T1	<i>Acacia harpophylla</i>	brigalow
91.1 – 93.5	2.4	S1	<i>Acacia cambagei</i>	gidgee
95.3 – 100	4.7	S2	<i>Acacia cambagei</i>	gidgee
95.5 – 95.6	0.1	S2	<i>Carissa lanceolata</i>	conkerberry



Summary:

Intercept of EDL 0 – 50m:	9.4 m
Intercept of EDL 50 – 100 m:	12.0 m
Measured crown cover % of EDL 0 – 100 m:	21.4
Structural formation:	Remnant acacia open-forest

Conclusions/notes:

Structure meets remnant status

Species consistent with least concern RE 10.4.5; species composition inconsistent with the least concern RE 10.4.3a were recorded within the remnant polygon

Site condition measured as moderate (VAST 2), with some cattle disturbance recorded throughout the study area.

Site is proposed as least concern RE 10.4.5 (100)

Plant Species

Str.	Rel. ¹	Scientific name	Common name
T1	D	<i>Acacia cambagei</i>	gidgee
T1	S	<i>Acacia harpophylla</i>	brigalow
T1	A	<i>Casuarina cristata</i>	belah
S1	D	<i>Acacia cambagei</i>	gidgee
S1	A	<i>Eremophila mitchellii</i>	false sandalwood
S1	A	<i>Santalum lanceolatum</i>	sandalwood
S1	S	<i>Acacia harpophylla</i>	brigalow
S1	A	<i>Terminalia oblongata</i>	yellow wood
S1	A	<i>Casuarina cristata</i>	belah
S2	D	<i>Carissa lanceolata</i>	conkerberry
S2	A	<i>Alectryon diversifolius</i>	scrub boonaree
S2	A	<i>Eremophila deserti</i>	Ellangowan poison bush
S2	A	<i>Casuarina cristata</i>	belah
S2	A	<i>Parsonsia lanceolata</i>	rough silkpod
S2	A	<i>Jasminum didymum</i>	jasmine
G	D	<i>Cenchrus ciliaris</i> *	buffel grass
G	A	<i>Parthenium hysterophorus</i> *	parthenium
G	A	<i>Leptochloa digitata</i>	umbrella canegrass
G	A	<i>Echinochloa colona</i> *	awnless barnyard grass
G	A	<i>Passiflora sp.</i> *	
G	A	<i>Tribulus terrestris</i>	caltrop
G	A	<i>Alternanthera mirabilis</i> var. <i>micrantha</i>	joyweed
G	A	<i>Glinus lotoides</i>	hairy carpet-weed
G	A	<i>Portulaca oleracea</i> *	common pigweed

¹Rel. = Relative dominance: D, dominant; C, codominant; S, subdominant; A, associated

*indicates a non-native species

Vegetation DBH (from BioCondition Assessment)

Scientific name	Common name	DBH (mm)	Average DBH (mm)
Average DBH for eucalypts:			
Acacia cambagei	gidgee	196, 225, 234, 248, 289, 215, 204, 304, 266, 226, 328, 160, 280, 150, 150, 150, 160 210, 170, 230, 200, 460, 210, 240, 180, 210, 180, 160, 350, 160, 250, 240, 220, 220, 230, 350, 320, 300, 420, 150, 150, 210, 180, 190, 320, 320, 170, 160, 170, 200, 150, 150, 160, 150, 340, 370, 180, 380, 180, 390, 250, 240, 340, 200, 270, 200, 310, 160, 430, 210, 160, 190, 200, 280, 480	247
Acacia harpophylla	brigalow	530, 270, 320, 290, 210, 410, 220, 280, 280, 190, 280	273
Average DBH for non-eucalypts:			238

Plate 21 Vegetation assessment polygon 5





Polygon 7 (Vegetation assessment site 27) and representative of Polygons 1, 2 and 8

Mapped RE: Least concern, 10.3.4b/10.3.6a/10.3.3b/10.3.3a (40/40/10/10)

Observed RE: Least concern, 10.3.6a (100)

Polygon No.:	7	Recorder:	Jessica Newton	Date:	06/05/2013
Purpose:	Regional ecosystem verification and BioCondition assessment				
Locality:	Lot 662 PH1491 Isaac Regional Council				

Stratum	Median height (m)	Height interval (m)	Est. cover density (D, M, S, V)
E			
T1	12	7 – 14	Mid-dense
T2	Absent	Absent	Absent
T3			
S1	3	1 – 6	Very sparse
S2			
G	0.6	0 - 1	Mid-dense
Structural formation:	Remnant eucalypt open-woodland		
Ecologically dominant layer:	T1		

Transect – Crown Cover Measured (Transect intercept method)

GPS coordinates:	Datum	MGA55	Transect length (m):	100
Start point:	Zone	5 5 E 442939	N 7571336	
50 m point:	Zone	5 5 E 442895	N 7571312	

Interval (m)	Intercept (m)	Stratum	Scientific name	Common name
0.0 – 2.2	2.2	T1	<i>Eucalyptus brownii</i>	Reid River box
4.7 – 6.2	1.5	T1	<i>Eucalyptus brownii</i>	Reid River box
8.2 – 14.2	6.0	T1	<i>Eucalyptus brownii</i>	Reid River box
44.9 – 48.0	3.1	S1	<i>Carissa lanceolata</i>	conkerberry
45.2 – 48.7	3.5	T1	<i>Eucalyptus melanophloia</i>	silver-leaved ironbark
51.2 – 58.0	6.8	T1	<i>Eucalyptus brownii</i>	Reid River box
76.1 – 82.6	6.5	T1	<i>Eucalyptus brownii</i>	Reid River box
96.0 – 100.0	4.0	T1	<i>Corymbia dallachiana</i>	ghost gum

Summary:

Intercept of EDL 0 – 50m:	13.2 m
Intercept of EDL 50 – 100 m:	17.3 m
Measured crown cover % of EDL 0 – 100 m:	30.5
Structural formation:	Remnant eucalypt open-woodland
Conclusions/notes:	
Structure meets remnant status	



Summary:

Species consistent with least concern RE 10.3.6a; no species consistent with the least concern REs 10.3.4b, 10.3.3b or 10.3.3a were recorded within the remnant polygon

Site condition measured as moderate (VAST 2), with some cattle disturbance recorded throughout the study area.

Site is proposed as least concern RE 10.3.6a

Plant Species

Str.	Rel. ¹	Scientific name	Common name
T1	C	<i>Eucalyptus melanophloia</i>	silver-leaved ironbark
T1	C	<i>Eucalyptus brownii</i>	Reid River box
T1	A	<i>Corymbia clarksoniana</i>	Clarkson's bloodwood
T1	A	<i>Amyema quandang</i> var. <i>bancroftii</i>	grey mistletoe
T1	A	<i>Corymbia dallachiana</i>	ghost gum
S1	D	<i>Petalostigma pubescens</i>	quinine berry bush
S1	A	<i>Alstonia constricta</i>	bitter bark
S1	A	<i>Acacia salicina</i>	sally wattle
S1	A	<i>Carissa lanceolata</i>	conkerberry
G	A	<i>Arundinella nepalensis</i>	reed grass
G	A	<i>Rostellularia adscendens</i> var. <i>hispida</i>	pink tongues
G	A	<i>Sida</i> sp.	
G	A	<i>Perotis rara</i>	comet grass
G	A	<i>Sida trichopoda</i>	high sida
G	A	<i>Chrysopogon fallax</i>	golden beard grass
G	A	<i>Heteropogon contortus</i>	black spear grass
G	A	<i>Cenchrus ciliaris</i> *	buffel grass
G	A	<i>Themeda triandra</i>	kangaroo grass
G	A	<i>Aristida jerichoensis</i> var. <i>jerichoensis</i>	Jericho wiregrass
G	A	<i>Aristida calycina</i> var. <i>calycina</i>	dark wiregrass
G	A	<i>Eriachne mucronata</i>	mountain wanderrie
G	A	<i>Spermacoce brachystema</i>	
G	A	<i>Phyllanthus virgatus</i>	spurge
G	A	<i>Enneapogon avenaceus</i>	ridge grass
G	A	<i>Oxalis corniculata</i> *	yellow wood-sorrel

¹Rel. = Relative dominance: D, dominant; C, codominant; S, subdominant; A, associated

*indicates a non-native species

Vegetation DBH (from BioCondition Assessment)

Scientific name	Common name	DBH (mm)	Average DBH (mm)
Eucalypts			
<i>Eucalyptus melanophloia</i>	silver-leaved ironbark	300, 360, 330	330
<i>Eucalyptus brownii</i>	Reid River box	380, 350	365
Average DBH for eucalypts:			344

Scientific name	Common name	DBH (mm)	Average DBH (mm)
Non-eucalypts			
Petalostigma pubescens	quinine berry bush	270, 210	240
Acacia salicina	sally wattle	200	200
Average DBH for non-eucalypts			227

Plate 22 Vegetation assessment polygon 7





Polygon 9 (Vegetation assessment site 9) and representative of Polygons 1, 2 and 8

Mapped RE: Least concern, 10.3.4b/10.3.3b/10.3.6a (80/10/10)

Observed RE: Least concern, 10.3.6a (100)

Polygon No.:	9	Recorder:	Jessica Newton	Date:	02/05/2013
Purpose:	Regional ecosystem verification and BioCondition assessment				
Locality:	Lot 662 PH1491 Isaac Regional Council				

Stratum	Median height (m)	Height interval (m)	Est. cover density (D, M, S, V)
E			
T1	17	15 – 17	Very sparse
T2	12	9 – 15	Mid-dense
T3			
S1	4	1 – 6	Very sparse
S2	Absent	Absent	Absent
G	0.5	0 – 1	Dense
Structural formation:	Remnant eucalypt open-woodland		
Ecologically dominant layer:	T1		

Transect – Crown Cover Measured (Transect intercept method)

GPS coordinates:	Datum:	MGA55	Transect length (m):	100
Start point:	Zone	5 5	E 451712	N 7574630
50 m point:	Zone	5 5	E 451730	N 7574596

Interval (m)	Intercept (m)	Stratum	Scientific name	Common name
0 – 6.8	6.8	T2	<i>Acacia excelsa subsp. excelsa</i>	ironwood
14.1 – 17.8	3.7	S1	<i>Carissa ovata</i>	currant bush
33.2 – 39.0	5.8	T2	<i>Acacia salicina</i>	sally wattle
51.6 – 55.5	3.9	T2	<i>Acacia salicina</i>	sally wattle
85.6 – 100	14.4	T1	<i>Eucalyptus brownii</i>	Reid River box
95.5 – 100	4.5	T2	<i>Acacia excelsa subsp. excelsa</i>	ironwood

Summary:

Intercept of EDL 0 – 50m:	0.0 m
Intercept of EDL 50 – 100 m:	14.4 m
Measured crown cover % of EDL 0 – 100 m:	14.4
Structural formation:	Remnant eucalypt open-woodland
Conclusions/notes:	
Structure meets remnant status	
Species consistent with least concern RE 10.3.6a; no species consistent with the least concern REs 10.3.3b or 10.4.3b were recorded within the remnant polygon	



Summary:

Site condition measured as moderate (VAST 2), with some cattle disturbance recorded throughout the study area.

Site is proposed as least concern RE 10.3.6a

Plant Species

Str.	Rel. ¹	Scientific name	Common name
T1	C	<i>Eucalyptus brownii</i>	Reid River box
T1	C	<i>Corymbia clarksoniana</i>	Clarkson's bloodwood
T1	S	<i>Eucalyptus camaldulensis</i> var. <i>obtusa</i>	river red gum
T2	D	<i>Acacia salicina</i>	sally wattle
T2	A	<i>Acacia excelsa</i> subsp. <i>excelsa</i>	ironwood
T2	A	<i>Amyema miraculosa</i> subsp. <i>boormanii</i>	fleshy mistletoe
S1	A	<i>Carissa ovata</i>	currant bush
S1	A	<i>Acacia excelsa</i> subsp. <i>excelsa</i>	ironwood
S1	A	<i>Petalostigma pubescens</i>	quinine berry bush
S1	A	<i>Stylosanthes scabra</i> *	stylo
S1	A	<i>Lysiphyllum carronii</i>	red bauhinia
S1	A	<i>Alstonia constricta</i>	bitter bark
G	A	<i>Perotis rara</i>	comet grass
G	A	<i>Sida cunninghamii</i>	ridge sida
G	A	<i>Chrysocephalum apiculatum</i>	billy-buttons
G	D	<i>Cenchrus ciliaris</i> *	buffel grass
G	S	<i>Aristida</i> sp.	
G	A	<i>Sida filiformis</i>	fine sida
G	A	<i>Eragrostis parviflora</i>	weeping lovegrass
G	A	<i>Chamaesyce dallachyana</i>	caustic weed
G	A	<i>Enneapogon robustissimus</i>	
G	A	<i>Tribulus terrestris</i>	caltrop

¹Rel. = Relative dominance: D, dominant; C, codominant; S, subdominant; A, associated

*indicates a non-native species

Vegetation DBH (from BioCondition Assessment)

Scientific name	Common name	DBH (mm)	Average DBH (mm)
Eucalypts			
<i>Eucalyptus brownii</i>	Reid River box	470, 300, 900, 850, 350, 500, 400, 320, 380, 400	487
<i>Eucalyptus camaldulensis</i> var. <i>obtusa</i>	river red gum	300, 500	400
<i>Corymbia clarksoniana</i>	Clarkson's bloodwood	300	300
Average DBH for eucalypts:			459
<i>Acacia salicina</i>	sally wattle	300	300
Average DBH for non-eucalypts:			300

Plate 23 Vegetation Assessment Polygon 9





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145 Ann Street Brisbane QLD 4000

GPO Box 668 Brisbane QLD 4001

T: (07) 3316 3000 F: (07) 3316 3333 E: bnemail@ghd.com.au

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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
A	J Newton	S. Danielsen	DRAFT	J Keane	DRAFT	28/06/2013

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Appendix B: Vegetation Removal Plan

NOTES:

This plan has been prepared for the exclusive use of the client as stated on this plan for the purpose of application to the relevant local authority for the land as described and should not be used by any other person or corporation and for any other purpose.

Areas and Dimensions are approximate only and are subject to final state approval and survey.

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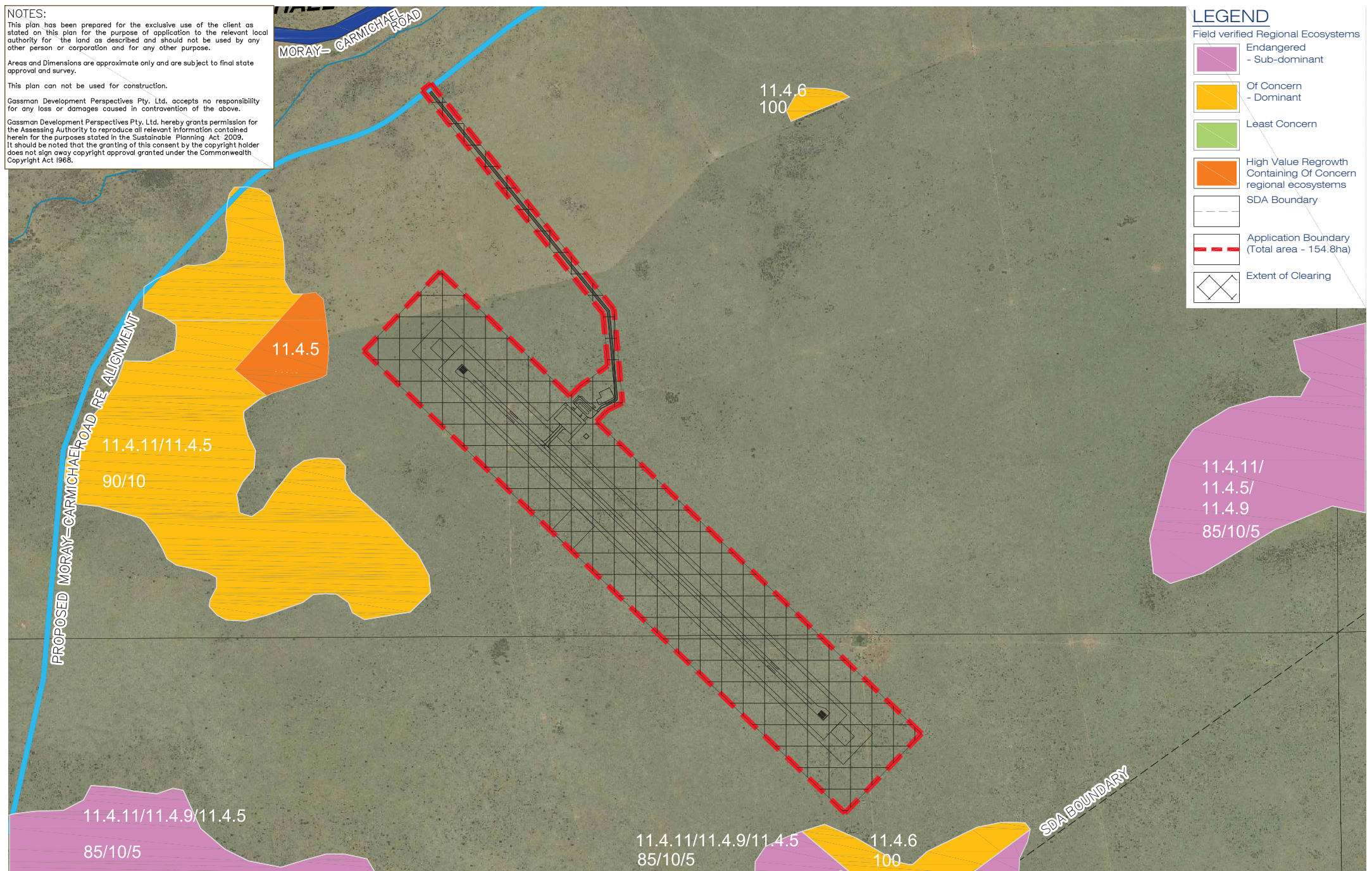
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LEGEND

Field verified Regional Ecosystems

- Endangered - Sub-dominant
- Of Concern - Dominant
- Least Concern
- High Value Regrowth Containing Of Concern regional ecosystems
- SDA Boundary
- Application Boundary (Total area - 154.8ha)
- Extent of Clearing



gassman
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planning
design
environment
surveying

Brisbane Office
Level 8
97 Creek Street Brisbane Q. 4000
t: (07) 32216732
f: (07) 32217305
e: mail@gassman.com.au
w: www.gassman.com.au



adani

OPW Vegetation Clearing
Extent of Clearing

Airport

AMENDMENT DETAILS		DATE
AMENDMENTS	F	
	E	
	D	
	C	
	B	
A	FINAL RELEASE	
	16-07-2013	

Scale 1:15 000 - Lengths are in Metres

date: 16-07-13
scale: 1:15 000 @ A3
design: PC/IAS
plan: 5370 E A VC 01 A

Appendix D: OPW Bulk Earthworks



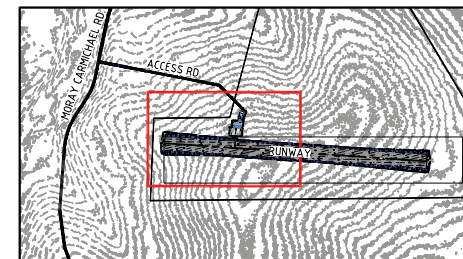
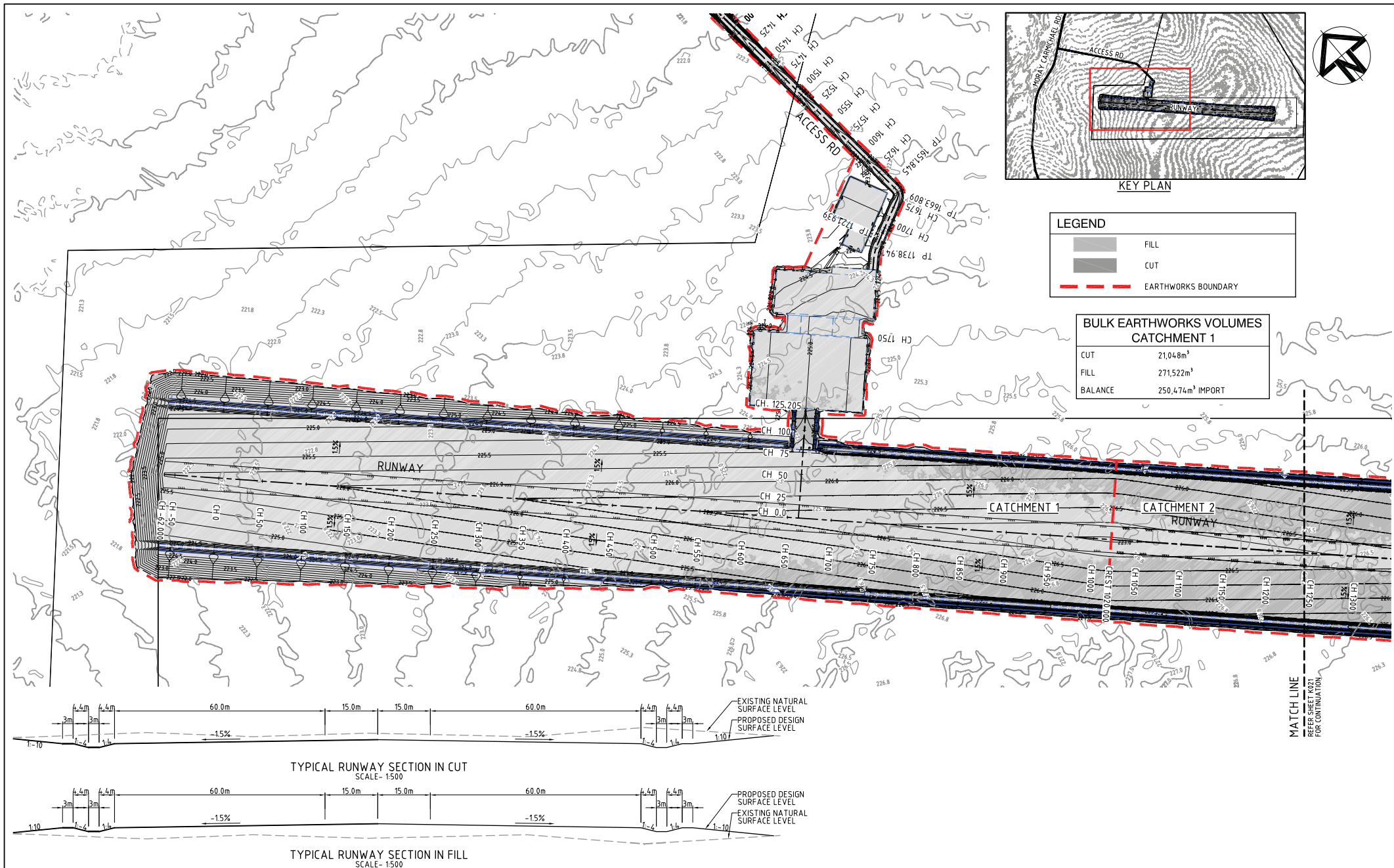
OPW Bulk Earthworks: Airport

17th July 2013



project coordination
urban + regional planning
landscape + urban design
environmental management
visualisation + spatial services
surveying services
advisory services



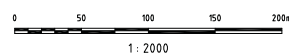


LEGEND	
	FILL
	CUT
	EARTHWORKS BOUNDARY

BULK EARTHWORKS VOLUMES CATCHMENT 1	
CUT	21,048m ³
FILL	271,522m ³
BALANCE	250,474m ³ IMPORT

TYPICAL RUNWAY SECTION IN CUT
SCALE - 1:500

TYPICAL RUNWAY SECTION IN FILL
SCALE - 1:500



Surveyor	
Client	
Filename	K020-AA006158-AAD-00-BULK AIRPORT.DWG

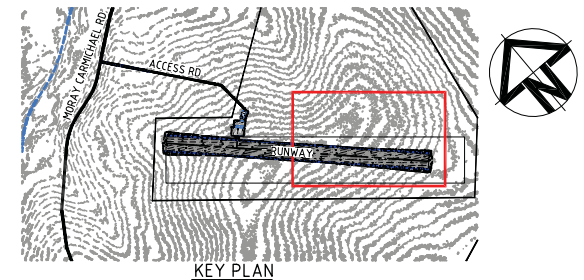
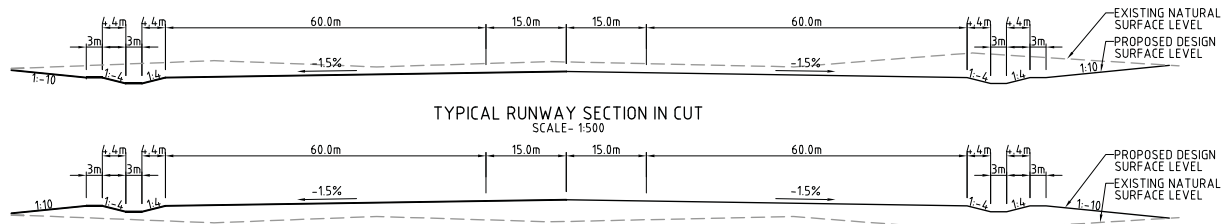


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Approved	R.P.E.O No. : - - - -	
Scales	1: 2000	Current Issue Signatures
Original Size	A1	Author T.PHAN
Height	AHD	Designer S. EISEL
Grid	GDA94	Reviewer C. HOWARD
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Project	CARMICHAEL MINE DEVELOPMENT	
Title	AIRPORT DESIGN RUNWAY BULK EARTHWORKS LAYOUT PLAN SHEET 1 OF 2	

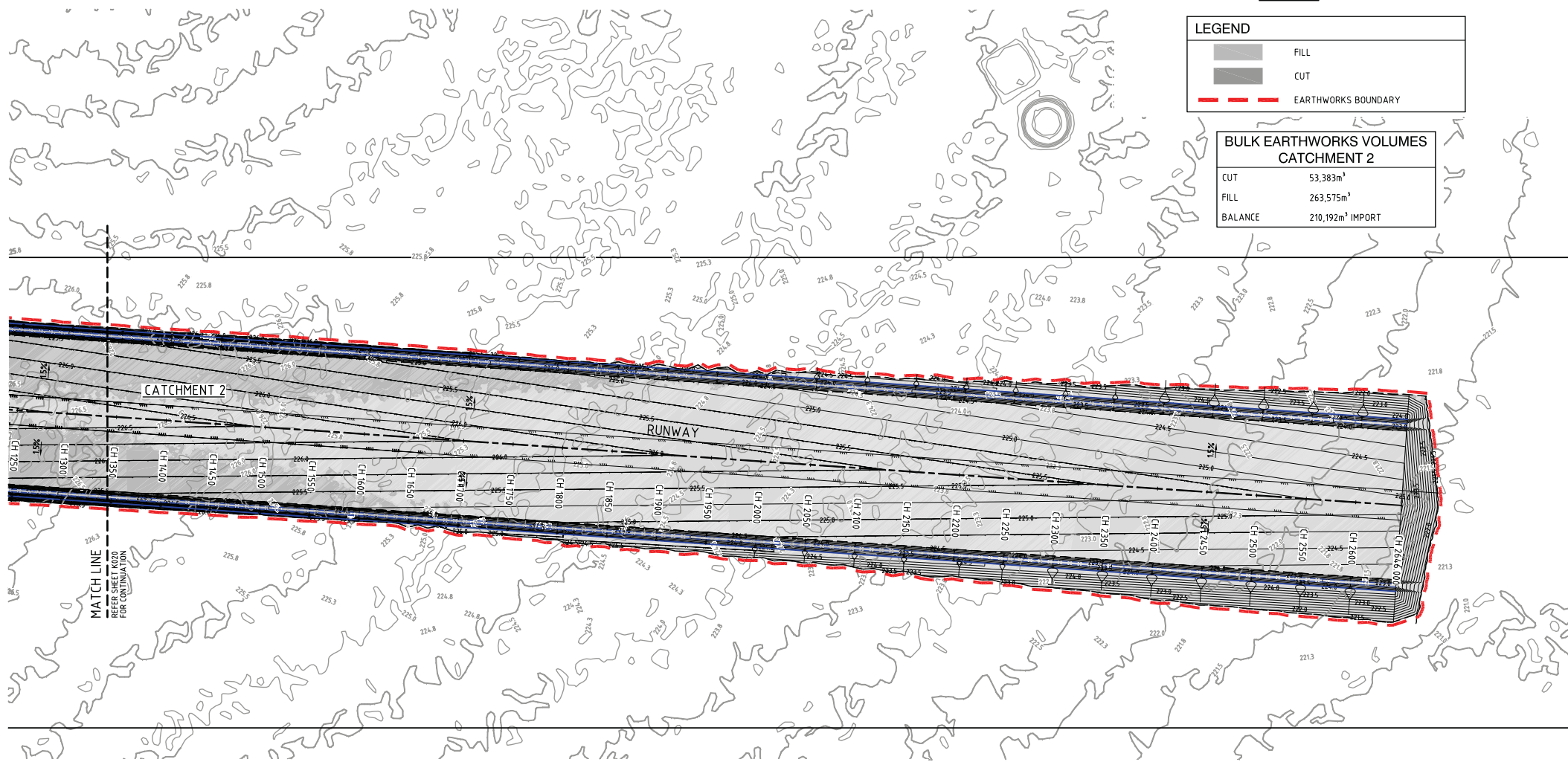
		HYDER CONSULTING Pty Ltd ABN 76 104 485 289 Level 7, 199 Grey Street South Brisbane, QLD 4101 Australia Tel: +61 7 3337 0000 Fax: +61 7 3337 0050 Web: www.hyderconsulting.com
Drawing No.	Project No.	Issue
K020	AA006158	A

A	ORIGINAL ISSUE	T.P	S.M	26.06.2019
Issue	Description	By	Chd	Date

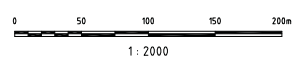


LEGEND	
	FILL
	CUT
	EARTHWORKS BOUNDARY

BULK EARTHWORKS VOLUMES CATCHMENT 2	
CUT	53,383m³
FILL	263,575m³
BALANCE	210,192m³ IMPORT



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Issue	Description	By	Chd	Date

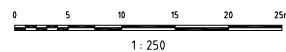
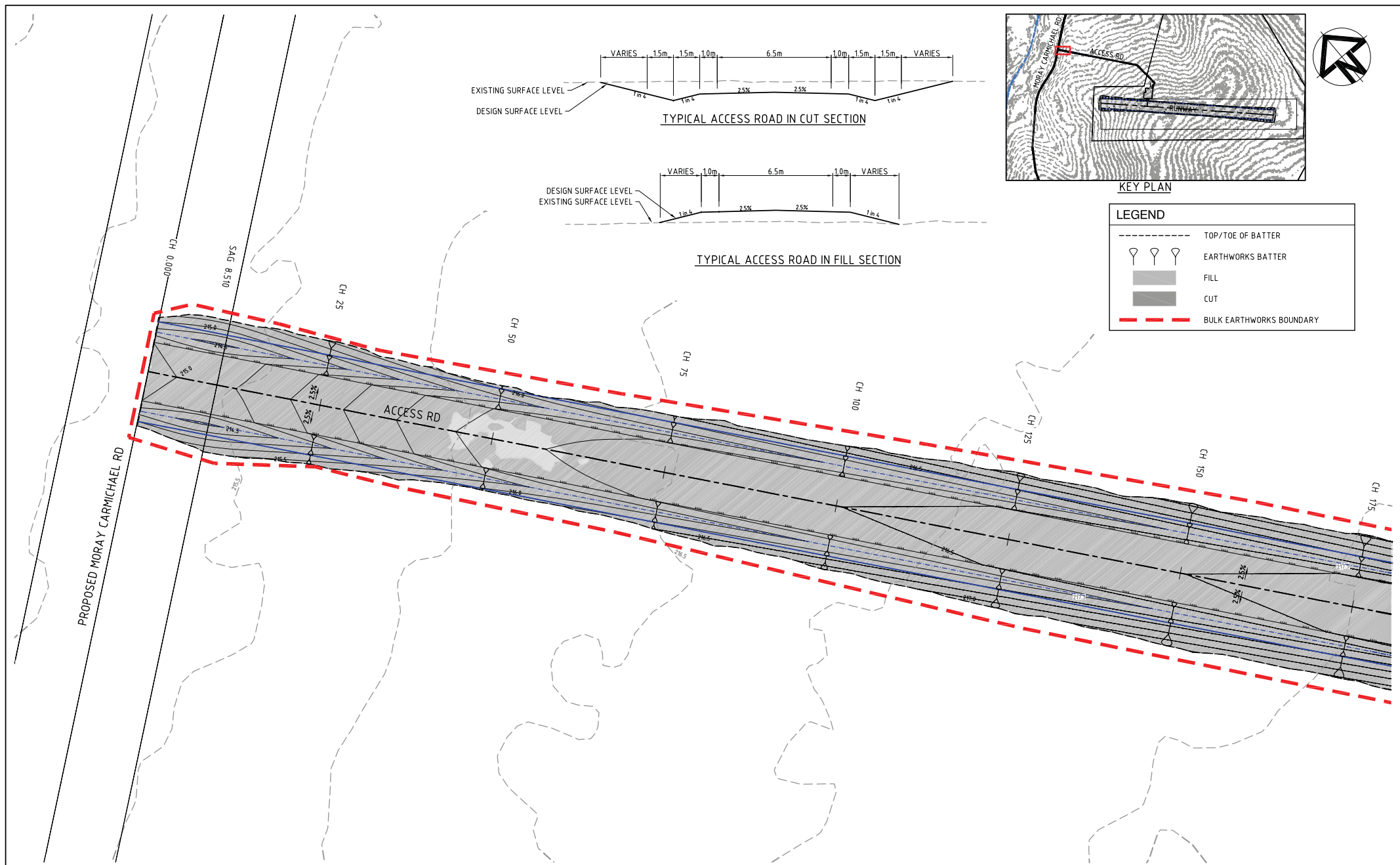
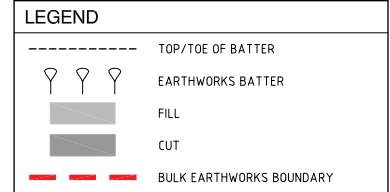
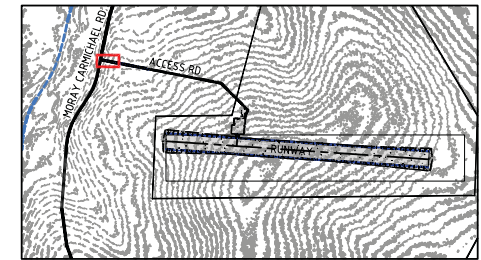
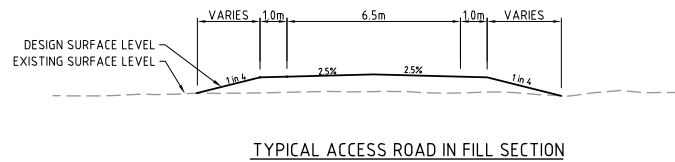


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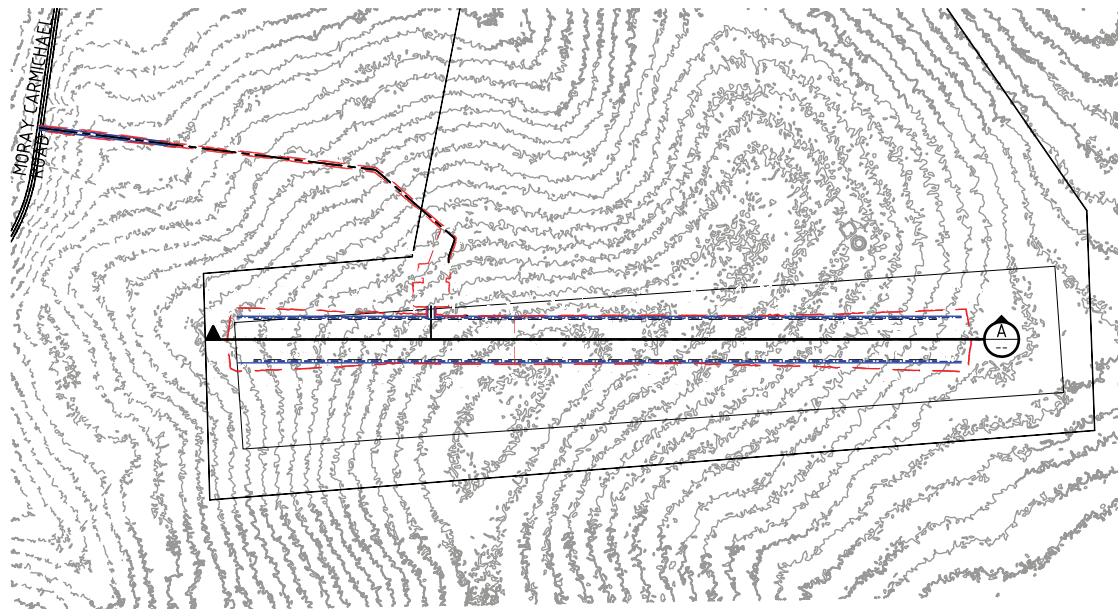
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Grid	GDA94
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Project	CARMICHAEL MINE DEVELOPMENT
Title	AIRPORT DESIGN RUNWAY BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 2

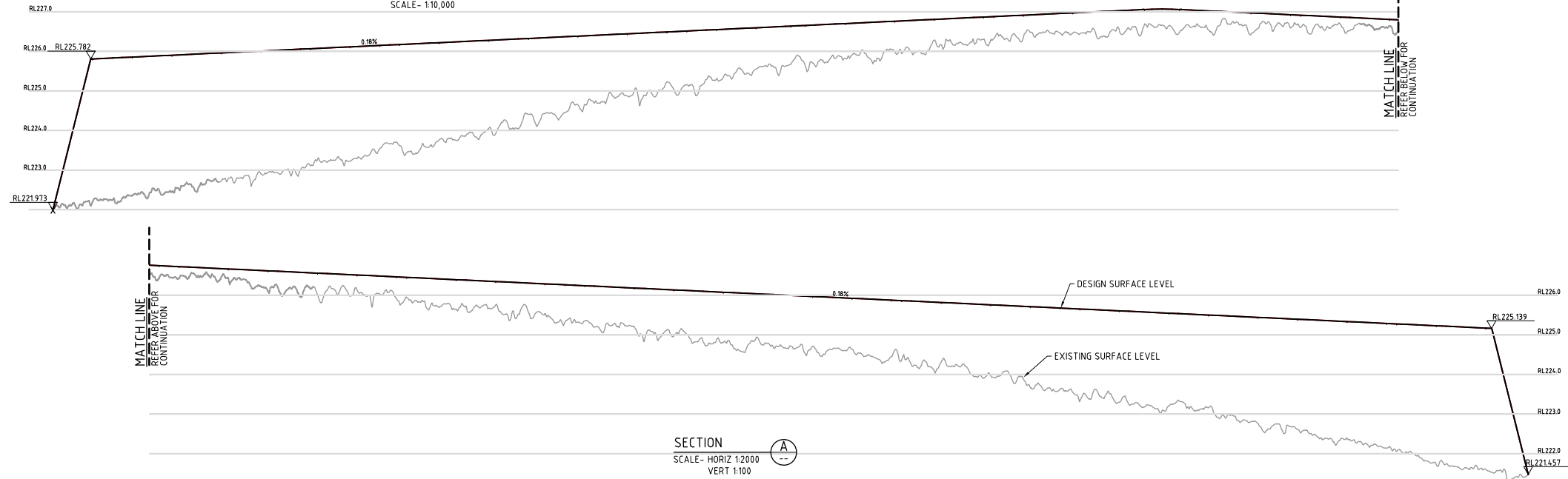
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Issue	A



								
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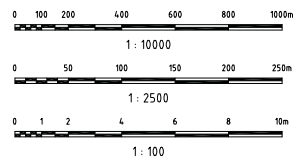


LAYOUT PLAN
SCALE - 1:10,000



SECTION
SCALE - HORIZ 1:2000
VERT 1:100

A ORIGINAL ISSUE		S.G.	S.M.	11/07/2013
Issue	Description	By	Ckd	Date



Surveyor
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Height Datum	AHD	Designer S. EISEL
Grid	GDA94	Reviewer C. HOWARD
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Project	CARMICHAEL MINE DEVELOPMENT	
Title	<u>AIRPORT DESIGN</u>	
	BULK EARTHWORKS SECTION	



HYDER CONSULTING Pty Ltd
ABN 76 104 485 289
Level 7, 199 Grey Street
South Brisbane, QLD 4101
Australia
Tel: +61 7 3337 0000
Fax: +61 7 3337 0050
Web: www.hyderconsulting.com

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K039	AA006158	A

Appendix E: ERA Sewage Treatment



Site Based Management Plan (Sewage): Airport

17th July 2013



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urban + regional planning
landscape + urban design
environmental management
visualisation + spatial services
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GDP Document Control

Originating Office:	Brisbane	Job Number:	5370
Physical Address:	Level 8, 97 Creek St QLD 4000	Job Name:	Adani Mining Pty Ltd
Postal Address:	GPO Box 999 BRISBANE.Q. 4001	Project Manager:	Gary Savins
Phone:	+61 7 3221 6732	Document Title:	Site Based Management Plan
Fax:	+61 7 3221 7308	Author:	Mark Spears
Email:	mail@gassman.com.au	Client:	Adani Mining Pty Ltd
Web:	www.gassman.com.au	Client Contact:	Melinda Bergmann
		Client Ref:	AMPL_MINE_SO_2013_821_R0

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V1.0 (internal DRAFT)	Mark Spears	Gary Savins
V2.0	Mark Spears	David Hansen

Approval for Issue

Version	Name	Position	Signature	Date
V2.0	David Hansen	Director		17 th July, 2013

Final Distribution

Adani Mining Pty Ltd	1 electronic copy
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1.0 Introduction

1.1 Goal and Purpose

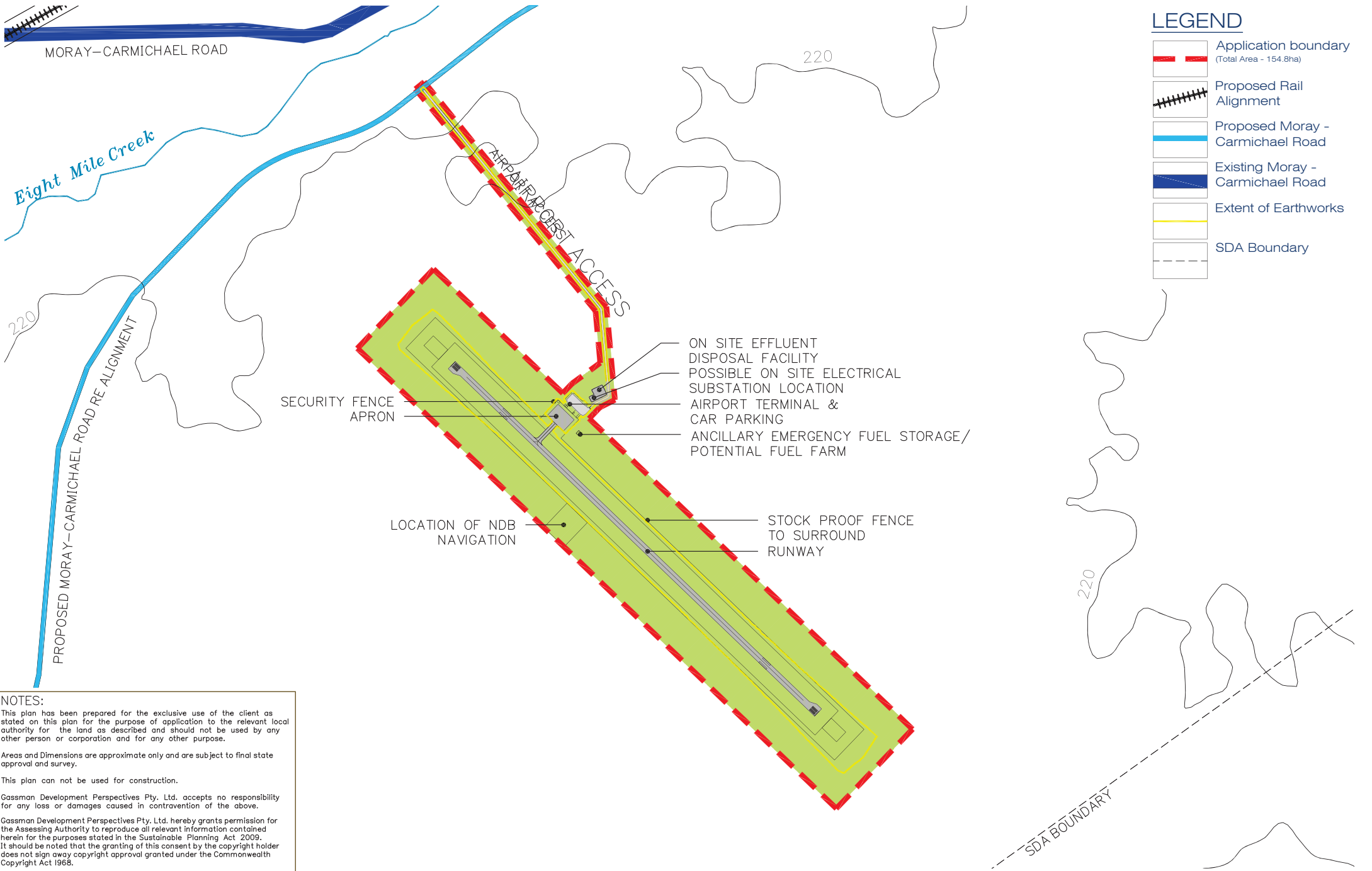
This Site Based Management Plan (SBMP) has been prepared to support the application material prepared for the airport precinct which is to be included within the Supplementary Environmental Impact Statement (SEIS) submission for the project. This SBMP describes methods of operation for a sewage treatment plant.

Given the nature of site operations, a Material Change of Use (MCU) component for Environmentally Relevant Activity 63 (1a [ii]) – Sewage treatment: more than more than 21 but not more than 100EP (equivalent persons) is an applicable and relevant approval to be obtained. The total number of EP's estimated for this operation is 36.

The location of the activity and its associated ancillary works in relation to the greater development proposal is shown in the below figure.

Key objectives of this Operational SBMP report are to:

- Address all relevant **environmental management issues** attached to the site;
- Develop **'life-of-proposal' control strategies** incorporating performance criteria to quantify acceptable levels of environmental harm;
- Provide evidence of **environmental responsibility** and **sustainable management** during the operation of the sewage treatment plant;
- Establish **performance criteria** and **objectives** relating to environmental and social impacts which will include measurable indicators and standards;
- Outline **monitoring techniques** to be undertaken against the performance criteria;
- Detail **prevention, minimisation** and **mitigation** strategies for controlling anticipated environmental impacts from a range of sources;
- Define roles of onsite **responsibility** for environmental management;
- Detail the **timing** of environmental management initiatives proposed;
- Outline **reporting** and **auditing** responsibilities for meeting objectives;
- Outline proposed **corrective actions** to remedy environmental issues that may arise;
- Provide Isaac Regional Council with a framework to assess **compliance** with the relevant statutory regulations; and



LEGEND

- Application boundary (Total Area - 154.8ha)
- Proposed Rail Alignment
- Proposed Moray - Carmichael Road
- Existing Moray - Carmichael Road
- Extent of Earthworks
- SDA Boundary

NOTES:
This plan has been prepared for the exclusive use of the client as stated on this plan for the purpose of application to the relevant local authority for the land as described and should not be used by any other person or corporation and for any other purpose.
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Brisbane Office
Level 8
97 Creek Street Brisbane Q. 4000
t: (07) 32216732
f: (07) 32217308
e: mail@gassman.com.au
w: www.gassman.com.au



MCU Airport Proposal Plan | Airport

AMENDMENT DETAILS		DATE
A M E N D M E N T S	F	
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	FINAL ISSUE	16-07-2013
Scale 1:15 000 - Lengths are in Metres		
0 200 400 600 800 1000 1200		

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plan: 5370 P A PP 01 A

- Provide a platform for a **consistent approach** to environmental management at the site for the duration of the plant's operation.

1.2 SBMP Overview

Adani Mining Pty Ltd is seeking approval to operate a sewage treatment plant for the treatment and processing of wastewater resulting from the proposed airport operations.

This SBMP has been prepared to provide the framework necessary to ensure that the recommended environmental control strategies identified are effectively implemented to minimise any actual or potential adverse environmental impacts during the plant's operation. Each of the site specific environmental issues are identified in **Section 2.3** and individually addressed in **Chapter 3** in accordance with the following structure:

Element/issue:

The aspect of the operation to be managed as it affects environmental values.

Performance Objectives:

The criteria against which the level of achievement of the stated objective shall be measured.

Operational Policy:

The management objective that applies to the potential source of environmental harm.

Performance criteria:

Measureable outcomes for each element of the operation as per available guidelines.

Implementation strategy:

Strategies that will be implemented in order to achieve the performance criteria.

Monitoring:

The monitoring requirements to measure performance and success of environmental protection measures.

Reporting/ Responsibility

Required reporting and review arrangements for each task and action (when and by whom).
Assign responsibility for carrying out each task or action to relevant person or organisation.

Corrective Actions:

Actions in the event of non-compliance with stated objectives/ targets including responsibility for remediation.

1.3 Responsibility and Training

The sewage treatment plant operations manager is responsible for ensuring all personnel associated with the plant's operation are aware of the contents of this SBMP and act in accordance with the plan.

All staff employed at the sewage treatment plant will be educated (as part of induction or ongoing staff training initiatives) on the environmental obligations of the SBMP and their general environmental duty of care. The organisational structure of the facility is yet to be determined but can be provided in response to conditions of approval.

This SBMP will be made available to all staff employed (directly or indirectly) within the sewage treatment plant.

The operations manager of the sewage treatment plant shall take responsibility for the effective implementation of this SBMP during the plant's ongoing operation.

The senior management of the site are committed to achieve the specified and relevant goals of this SBMP and are committed to continual environmental improvement.

Four times per year, senior management of the site will meet to review the environmental performance of the site and investigate and implement measures to achieve continual environmental improvement.

1.4 Incident Register

There will be particular adherence to prompt resolution of any environmental or safety incidents recorded in relation to the operation of the plant. Subsequently, emphasis will be placed on the development and implementation of corrective actions in response to non-compliance with the SBMP (as identified as part of the monitoring process).

The performance objective/ indicator regarding the resolution of these incidents is for the issue to be resolved in such a manner that there will be a reduction in the risks of the incident re-occurring.

The operations manager is to maintain an *Incidents and Complaints Register* which lists the date of the incident or complaint. In each instance, an incident/ complaint log is to be completed. This log will contain information such as:

- Date of incident
- Nature of incident and subsequent information;
- Location;
- Name of person who reported the incident;
- Staff member who received notice of incident;
- Manager's review and comment;
- Recommended action to resolve the incident;
- List of organisations to be engaged if incident is warranted;
- Outcome of actions undertaken subsequent to incident being recorded; and
- Date of incident resolution.

In addition to the above log, each incident is to be registered on the Incidents and Complaints Register. Further, Isaac Regional Council and any other relevant authority is to be notified and directions sought with regard to corrective actions for incidents which have the potential for environmental harm.

2.0 Process Details

2.1 Process

The process description below is a general outline of the process according to information available at the time of preparation. It is anticipated that more detailed information regarding the sewage treatment process including exclusion of hazardous waste, capacity information equipment-specific methods of treatment, expected water quality characteristics for treated effluent, and emergency contingency plans may be provided in response to development approval conditions at a later time. At such a time that a suitably qualified contractor is engaged to construct the sewage treatment plant, a list of persons and companies including qualifications can be provided. It is anticipated that appropriately worded approval conditions could require this information. A flow diagram depicting the process has been included in **Attachment 1**.

Process Description

1. The preferred system of conveyance for the airport sewage treatment plant is via a gravity system. This system conveys raw, untreated sewage through pipelines to a treatment facility or lift station. The sewer lines are straight and installed on a specific horizontal and vertical alignment, with manholes placed at set intervals, pipe intersections and at changes in pipeline direction and grade.

The pipes are installed with uniform gradients sufficient to create a self-cleansing velocity of 0.6m/s. Concrete manholes allow access for inspection, cleaning, and repair. Construction of these systems typically requires a minimum of 1.2m cover above the pipes and minimum grades of 0.67%.

Traditional gravity sewers have lower construction, operating and maintenance costs than pressure or vacuum systems.

2. The initial step of the sewage treatment process is that the wastewater is screened through a mechanical fine screen with a 5mm diameter. This allows for a rate of 80L/s to be screened. During wet weather, influent flows in excess of this capacity will flow over a weir to a 20mm diameter screen.

3. Screened wastewater flows via a gravity system to a biological nutrient removal plant. Excess flows experienced during wet weather overflows to polishing lagoons in the case where the flow balancing tank has reached capacity after which it is pumped back through the treatment process.
4. The biological nutrient removal plan is comprised of the following components:
 - An anaerobic and flow balancing tank which facilitates phosphorous removal
 - Two anaerobic/anoxic basins with surface aerators and internal recycling rotate between aerobic and anoxic conditions to reach complete biological oxidation of organic matter, complete nitrification and significant denitrification of the wastewater. Wastewater is then pumped to the polishing ponds, and then subsequently through a filtration facility through a UV disinfection device via the secondary sedimentation tank.
 - Waste activated sludge is pumped to clay lined sludge drying pans which facilitate natural air drying of surplus biological sludge. Excess water is controlled from the pans via a drainage system which then flows to a pump which moves it to the anaerobic tank at the top of the sewage treatment plant. Sludge is allowed to air dry before it is excavated and stockpiled for future reuse as soil conditioner.
5. Excess water still present after the material has naturally dried is pumped to the aerobic polishing lagoons prior to its proposed reuse in irrigation, dust suppressants and toilet water in other areas of the mine and living areas. Following the treatment process, it will be processed to an A+ standard prior to its use.

2.2 Environmental Issues

Chapter 3 of this SBMP contains descriptions of issues and management strategies for the ongoing operation of the sewage treatment plant within the following environmental management areas:

- Air quality
- Noise management
- Water management
- Waste management

The closest residential sensitive receiver is the Mine Workers Accommodation Village which is located approximately 3600m to the north east from the sewage treatment plant associated with the airport. The closest ecologically sensitive receiver is Eight Mile Creek and is located approximately 1840m from the sewage treatment plant. These distances are considered sufficient to ensure that no detrimental effects are caused by the sewage treatment plant on these sensitive receivers.

2.3 Summary and Conclusion

The above sections have outlined the goal and purpose of this Site Based Management Plan (SBMP). The format and structure of the subsequent specific environmental management plans for individual sources of environmental risk have been delineated in addition to an overview of procedures involved with the implementation of this Plan including training requirements and areas of accountability and responsibility. The formal process of recording and managing incidents and complaints has also been detailed.

A general overview description of the process involved in sewage treatment has been included. Finally, a list of the potential environmental issues likely to affect the subject site and its surrounding environment has been discussed.

The following sections specifically address individual environmental risks identified on the subject site and outline methods of management and monitoring to ensure that the processes undertaken at the sewage treatment plant site do not negatively affect the surrounding environment.

3.0 Environmental Management

Plans

3.1 Air Quality Management Plan

The environmental hazards relating to air quality arise from dust and odour emissions associated with the operation.

To ensure this SBMP is aligned with a Best Practice approach to environmental management, the following management plan will address actual and potential environmental issues.

The objectives associated with air emissions for the storage plant are as follows:

Potential Impacts

The main potential source of emission to air is from odour emanating from the processed materials on the site and dust issues associated with the site's operations.

The following Plan details specific measures and processes to manage potential issues associated with air emissions from the site.

Table 1 - Air Quality Management Plan

Policies: • Ensure that air emissions do not adversely affect the environment, health, welfare and amenity of adjacent land uses; and • All emissions must comply with the performance criteria contained in the <i>Environmental Protection (Air) Policy 2008</i>, or those by Council in the Planning Scheme.	
Performance Objective	• The activity will be operated in a way that protects the environmental values of air.
Operational	• The management objective of air quality is to ensure that there

Policy	are no dust or odour issues attributable to the operation which may affect the surrounding environment.
Actions/ Controls	• All areas within the plant that will be traversed by vehicles will be sealed. • All sealed areas will be kept clean and regularly monitored for dust build up. • Contents of sludge pans will be kept saturated in the winter to minimise odours. • Anaerobic/flow attenuation will be covered and ventilated with extracted air treated in a wet packed bio-scrubber followed by a biofilter. • A two stage odour scrubber/filter odour attenuation facility will be installed. Ventilated air will be continuously drawn from the covered anaerobic/flow attenuation tank under a negative pressure of up to 20 Pa and blown through a wet packed scrubber in order to remove present hydrogen sulphide. Water will be sprayed over the packed media, in the opposite direction to the air used for ventilation, to be regularly recirculated. Ventilated air will subsequently be directed through biofilters to remove remaining hydrogen sulphide and any other present odours. An automatic top water sprinkling/drip irrigation system with moisture sensors will ensure the bed remains moist at all times.
Maintenance	• All machinery on the subject site will be kept in good working order as per the manufacturer's specifications. Faulty machinery will be immediately repaired by appropriately qualified staff.
Performance Indicators	• There is no discharge to air of odour or dust that may cause an adverse effect on the health of humans or the surrounding environment resulting from the operation of the activity.
Monitoring	• Regular auditing of odour and dust levels present on the subject site by staff and operations manager.
Reporting / Responsibility	• All air quality related incidents and complaints are to be recorded in a Complaints Register (by the operations manager), which is to be held on site. • All incidents and complaints will be reported to the operations manager as they occur.

	<i>Responsible person</i> • All Staff • Operations Manager
<i>Corrective Action</i>	• If odour issues are detected on site, the source of the odour must be isolated and treated in accordance with appropriate measures depending on its source. • If dust issues are detected on site, the areas from where the dust is emanating must be immediately watered down or cleaned up to prevent further dust entrainment.

3.2 Noise Management Plan

The objectives of noise management at the site are to minimise actual and potential noise disturbance to the surrounding environment and comply with the required noise standards in the *Environmental Protection (Noise) Policy 2008* and the Isaac Planning Scheme.

Due to the remote setting of the activity, it is considered that there are no significant noise issues likely to occur as a result of the activity. The day to day operation of the site is not considered to be particularly noisy and is predominantly limited to vehicle noise and equipment noise, primarily pumps and aerators operating at below 40DB. All equipment on site will be maintained as per factory standards to ensure excessive noise generation is avoided.

No sensitive receivers are considered to occur within the vicinity of the operation as it is located in a remote area within a surrounding industrial setting.

Notwithstanding the above, the following management plan has been prepared to comply with the best practice approach to environmental management.

Potential Impacts

Trucks and sewage treatment plant equipment have the potential to generate noise, particularly if they are not properly maintained.

The following Plan details specific measures and processes to manage potential issues associated with noise emitted from the site

Table 2 - Noise Management Plan

Policies: • To limit as much as possible noise related impacts on the surrounding environment. • To comply with the noise performance criteria contained in the Isaac Planning Scheme and the <i>Environmental Protection (Noise) Policy 2008</i>.	
Performance Objective	• No noise related incidents directly attributable to the sewage treatment plant operation.
Operational Policy	• The management objective for noise control is to ensure that no noise incidents or complaints are recorded as a result of the

	operations.
Actions/ Controls	• All equipment will be checked and maintained to ensure that it is not excessively or unnecessarily noisy • Reduce non-essential noise sources whenever possible.
Maintenance	• Ensure machinery is regularly maintained and service to ensure minimal unnecessary noise production.
Performance Indicators	• Sound from the operation is not excessive outside the boundaries of the site. • The release of sound to the environment from the activity is managed so that adverse effects on environmental values including health and wellbeing and environmental impacts are prevented or minimised.
Monitoring	• Regular assessment of noise by staff and management.
Reporting / Responsibility	• All excessive noise issues observed by staff and management are to be recorded in an Incidents Register (by the Operations Manager), which is to be maintained on site. • All complaints and incidents will be reported to the Operations Manager as they occur. Responsible person • All Staff • Operations Manager
Corrective Action	• Corrective actions to be developed in consultation with Council and state agencies if required; and • In the event that nuisance noise becomes the basis of consistent environmental or health issues, further strategies will be considered and implemented where practical.

3.3 Water Quality Management Plan

The objectives of water management at the site are to minimise actual and potential disturbance to the surrounding environment resulting from water discharges emanating from the site and to comply with the required water quality standards in the *Environmental Protection (Water) Policy 2009* and Isaac Planning Scheme.

No discharges to existing water courses are planned for this sewage treatment plant. Excess treated water will be used as dust attenuation and irrigation in other areas of the mine and workers accommodation and recreation areas. Due to the relatively flat grades of the subject site, erosion risks to the receiving environment in times of discharge are not considered likely to occur. A Stormwater Management Plan for the operation has been prepared and submitted in conjunction with this application material to accompany the SEIS submission. This Plan contains additional detail on capture and treatment of stormwater on the subject site.

The sewage treatment plant will be constructed to produce A+ standard effluent. A more detailed sustainability study demonstrating the suitability of various post-treatment releases to the environment and various methods and locations of discharge may be conditioned in approval conditions including soil testing.

Potential Impacts

Detrimental impacts to the surrounding receiving environment attributable to water discharges from the site.

The following Plan details specific measures and processes to manage potential issues associated with water quality.

Table 3 - Water Quality Management Plan

Policy: To responsibly manage all water used on the site to ensure that offsite discharge does not result in detrimental impacts to surface or groundwaters.	
Performance Objective	The activity will be operated in a way that protects environmental values of any receiving waters.
Actions/ Controls	Water treated in the sewage treatment plant will be monitored for a range of water quality parameters prior to its transportation off site for use in dust attenuation and irrigation purposes. No

	wastewater will be discharged to surface or groundwater on or near the subject site.
Maintenance	All wastewater storage basins, tanks and lagoons to be regularly checked for breaches and integrity to ensure that no leakages occur.
Performance Indicators	No uncontrolled discharges of any water from the subject site.
Monitoring	- Periodic monitoring of wastewater storage basins, tanks and lagoons to ensure no leakages or breaches. - Treated effluent will be monitored for the following characteristics: - BOD; - Suspended solids (SS); - Faecal coliform (FC); - Total nitrogen (TN); - Total phosphorous (TP); - Ammonia (NH₃-N); and - Electrical conductivity (EC/TDS).
Reporting / Responsibility	- All instances of actual or potential water quality discharge issues are reported and recorded. Responsible person - All Staff - Operations Manager
Corrective Action	Review and if necessary modify response procedures, equipment or facilities.

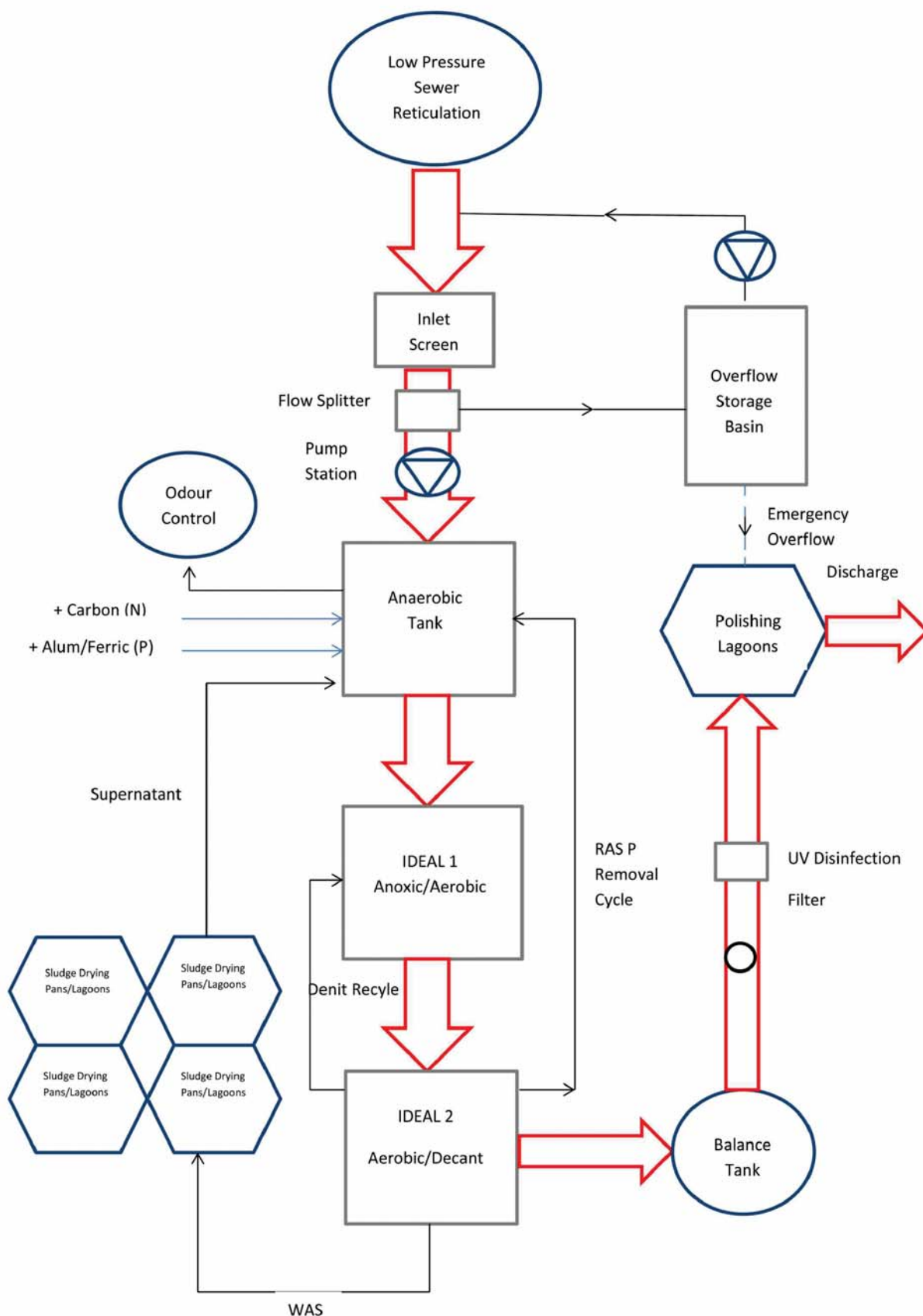
3.4 Waste Management

The primary waste generated from this operation will be sludge. The wastewater will be entirely used on the mine and living and recreation areas of the site and will not require management in terms of discharge.

Sludge is proposed to be used as a soil conditioner where its physical and chemical parameters allow. However, in situations where the sludge is not suitable for this use, it will be stockpiled and appropriately disposed of in landfill.

Appropriate refuse receptacles will be provided for incidental wastes that are generated via other means in conjunction with the use of the site. However, it is not anticipated that significant amounts of other wastes will be generated as part of this operation.

Attachment 1 – Site Plan and Process Diagram



		AMENDMENT DETAILS	DATE
REVISION	F		
	E		
	D		
	C		
	B		
	A	FINAL RELEASE	16-07-2013



gassman
development
perspectives

planning
design
environment
surveying

Brisbane QLD Office
Level 13
73 Creek Street Brisbane Q. 4000
t: (07) 32216732
f: (07) 32217308
e: mail@gassman.com.au
w: www.gassman.com.au



adani

Sewerage
Treatment Plant
Process Diagram

Airport

date: 16-07-13
scale: nts
design: MS/IS
plan: 5370 E A STP 01 A

Appendix F: Preliminary Servicing



Adani Carmichael Mine - Airport

Preliminary Services Report

Hyder Consulting Pty Ltd
ABN 76 104 485 289
Level 7, 199 Grey Street
South Brisbane QLD 4101
Australia
Tel: +61 7 3337 0000
Fax: +61 7 3337 0050
www.hyderconsulting.com



Adani Carmichael Mine - Airport

Preliminary Services Report

Airport

Author Sunny Seshadri

A handwritten signature in blue ink, appearing to read "Sunny Seshadri", written over a horizontal line.

Checker Shane Miley

A handwritten signature in blue ink, appearing to read "Shane Miley", written over a horizontal line.

Approver Chris Howard

A handwritten signature in blue ink, appearing to read "Chris Howard", written over a horizontal line.

Report No F0003-AA006158-AAR-01

Date July 2013

This report has been prepared for Adani Mining Pty Ltd in accordance with the terms and conditions of appointment for engineering services dated 13th June 2013. Hyder Consulting Pty Ltd (ABN 76 104 485 289) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

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Appendices

Appendix A
Engineering Drawings

1 EXECUTIVE SUMMARY

Gassman Development Perspectives have appointed Hyder consulting on behalf of Adani Mining Pty Ltd (Adani) to undertake an assessment of the preliminary services and key infrastructure required to service the proposed Airport associated with the planned Carmichael Coal Mine. The site is located approximately 160kms west of Moranbah, Central Queensland on land described as Lot 662 on Crown Plan PH1491

This Preliminary Engineering Services Report details the civil services component of the development and the engineering planning considerations associated with a Development Approval. The proposed development is located within the Isaac Regional Council (IRC). The site is currently being used as cattle grazing property colloquially known as 'Moray Downs'.

This report demonstrates that the proposed development can be adequately serviced by potable water, sewerage, electrical services and vehicle access infrastructure. A Site Based Stormwater Management Plan (Refer document A0006-AA006158-AAR-01 SMP Airport) has been prepared by Hyder Consulting to specifically address the stormwater quantity and quality measures associated with the development.

2 INTRODUCTION

The mine Airport is located approximately 160kms west of Moranbah and is situated approximately 3.4 kms to the south east of the proposed Industrial Area Stage 1 and 0.9 kms south west of the proposed Accommodation Village. The Airport is situated 2.3 kms from the proposed realigned Moray Carmichael Road which is the major road connecting the Airport to the Accommodation Village, Industrial Areas and the Mine sites.

3 SITE CHARACTERISTICS

3.1 EXISTING SITE

The site of the Carmichael Coal Mine Airport is located approximately 160kms west of Moranbah, Queensland in the Isaac Regional Council. The proposed development area is approximately 154.8 Ha and situated within Lot 662 on PH1491, close to the Moray Carmichael Road.

Contours obtained from Lidar survey reveals that the proposed Airport site is situated at levels between RL 221.50 m AHD and 227 m AHD. The existing site topography naturally forms into two separate catchments with one catchment grading to the north-west and the other catchment grading to the south-east.

3.2 PROPOSED DEVELOPMENT

It is proposed to establish the Airport to support the mine workers working at the Carmichael Coal Mine. The developed site is to contain an airport terminal building with onsite parking facilities, a tarmac to service incoming aircrafts and a single runway with all associated services including sewerage, electricity and potable water.

The proposed development will be constructed in fill in order to incorporate the proposed stormwater catchment strategy. Refer to Engineering Drawings K020 to K023-AA006158 in Appendix A for details of proposed Bulk Earthworks Layout

The proposed development has incorporated water sensitive urban design measures throughout the early planning phase to ensure that all necessary stormwater quality and quantity objectives are met.

4 SEWER

The proposed strategy for the Airport will involve collection of waste effluent via a Gravity Sewer Reticulation and conveyance to a package sewage treatment plant on site. Drawing K035-AA006158 in Appendix A shows the preliminary concept design of the Airport and the proposed location of the sewage treatment plant. Due to the nature of the location and site of the airport, it is proposed that a gravity sewage conveyance system will be an efficient system to convey the effluent to the package treatment plant.

4.2 LOADING

The Airport is made up of the main terminal building, tarmac, a single runway and onsite parking facilities. Table 4.1 below lists the contribution estimates in EP's (Equivalent Person).

Table 4.1 – EP contributions for the Airport

Building Use Type	EP	Demand calculator based upon type of use
Airport	36	1.6 ET/100 m ² GFA

The water consumption demand was calculated using the demand estimates as shown in Table 4.1 within the airport terminal building of proposed 831 m² GFA. The equivalent ET's were then converted to EP by applying a multiplier of 2.7EP to 1 ET as is generally applied by Queensland Urban Utilities in their assessments of flow sewer demands.

4.3 RETICULATION

Earthworks' modelling of the Airport has indicated the opportunity for use of a gravity sewer system to feed into a sewage treatment plant (STP). Traditional gravity sewers are the preferred reticulation system where existing terrain allows their inclusion as they have lower construction, operating and maintenance costs.

Grading of the access road to the north to tie in with natural contours indicates a slope sufficient to run a gravity sewer to a location north of the airport. Given that the prevailing winds are generally from a south-easterly direction this would seem like a suitable location to also avoid any odour issues from the STP.

Conventional gravity sewers convey raw, untreated sewage through pipelines to a treatment facility or lift station. The sewer lines are straight and installed on a specific horizontal and vertical alignment, with manholes placed at set intervals, pipe intersections and at changes in pipeline direction and grade.

The pipes are installed with uniform gradients sufficient to create a self-cleansing velocity of 0.6m/s. Concrete manholes allow access for inspection, cleaning, and repair. Construction of these systems typically requires a minimum of 1.2m cover above the pipes and minimum grades of 0.67%.

4.4 SEWER TREATMENT PLANT

The sewer treatment plant (STP) shall be a proprietary package provided by an external supplier. The supplier shall be provided with loadings and treatment effluent quality targets they will need to meet.

4.4.1 Location

Drawing K035-AA006158 in Appendix A shows the location of the sewage treatment plant to the north of the Airport. Access to the STP shall be via the proposed private Airport Access Road.

4.4.2 Treatment Quality

It is proposed that treated effluent shall be recycled and used for irrigation and non-potable re-use within the Airport. The target of Class A+ as requested by Adani Mining Pty Ltd will need to be achieved from the STP. This is the second highest quality of recycled water and is for non-drinking purposes. Table 4.2 summarises the various uses for Class A+ recycled water.

Table 4.2 – Some uses for treated Class A+ effluent

Suitable uses	Class A+
Irrigation of residential gardens and lawns – below ground	Y
Irrigation of public open spaces – above ground uncontrolled access	Y
Dust suppression, compaction	Y
Watering parks, playing fields, footpaths and roadside plants	Y
Filling fenced ponds, lagoons and dams (not used for recreational purposes)	Y
Road works	Y
Hydraulic testing of sewer infrastructure	Y
Irrigation of landscaping on construction sites	Y
Toilet flushing	Y
Fire sprinkler/prevention systems	Y

5 WATER

It is anticipated that water for consumption purposes could be sourced from a range of various means, which may include local bore water wells, rain water capture, and external bulk water delivery. Where necessary, water shall be treated onsite and conveyed to the various buildings within the Airport .

It is also considered likely that temporary interim solutions may need to be implemented on site until more permanent and sustainable water supply strategies are activated in accordance with the wider project. Either way, potable water will be required at each stage of the airport's evolution, and conditions to that effect will be accepted by the Applicant.

It is also acknowledged that treated effluent from the sewerage treatment plant (STP) shall be recycled to Class A+ grade and used for onsite irrigation and non-potable re-use purposes.

6 ELECTRICAL SERVICES

The occupancy within the Airport will vary throughout the day/week dependant on the split between shifts, etc.

It is acknowledged that the airport will require a continuous power supply at all times from the commencement of flight operations, and the source of supply will likely reflect the strategies in place for the broader project supply.

The long term power supply is likely to be sourced from the electrical substation to be located within the nearby industrial area, however until such time as this permanent supply is available a range of interim measures, including diesel gensets, will be used. The nominal location of the short and long term supply for the Airport is shown on drawing K035-AA006158 in Appendix A.

7 ROADS AND ACCESS

Vehicle access to the Airport shall be via the new Moray Carmichael Road alignment. The Airport will then be linked via a dedicated private Airport Access Road. The new Moray Carmichael Road alignment will connect the Airport to the Industrial Area, Accommodation Village and Mine Sites.

8 EARTHWORKS

The existing site is currently located on a natural ridge line. The proposed development will be constructed in fill. In order to incorporate the proposed stormwater catchment strategy the earthworks will be split up such that a portion of the site falls towards the north-west and the remaining towards the south-east.

In setting the above catchment strategy, the formation of a longitudinal change in slope in the form of a crest has been incorporated into the preliminary grading of the Airport runway. The Civil Aviation Safety Authority (CASA) Design Standards for Licenced Aerodromes (Chapter 7) confirms that:

The change in slope between two contiguous sections of the runway is not to exceed: 1.5% where the runway is to accommodate aircraft with a code number of 3 or 4.

The maximum longitudinal grade change between catchment 1 and catchment 2 of the proposed runway does not exceed 0.5% and therefore falls well within the limits set out by CASA.

It is envisaged that detailed bulk earthworks modelling will be undertaken as part of the detailed design stage. Refer to Hyder drawing K020-AA006158 for details of Preliminary Bulk Earthworks Layout.

It is envisaged that earthworks fill import material will be sourced locally from existing and planned quarry sites in the region.

9 CONCLUSION

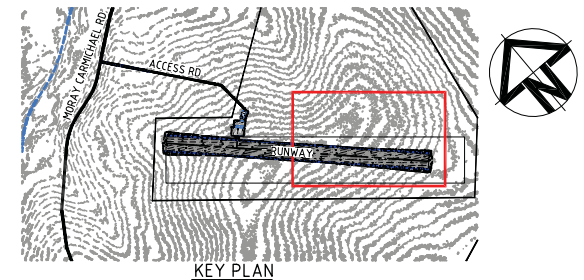
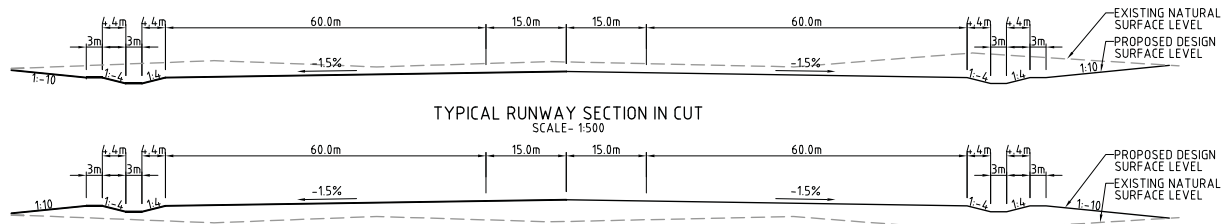
This report has demonstrated that the proposed Airport has undergone responsible planning with regards to the provision of all necessary engineering services, including sewer, water and electrical infrastructure.

Additional engineering issues such as road access and earthworks have also been discussed within the report. The Moray Carmichael Road will be the main access road to the Airport. Bulk earthworks have been identified to occur on site as a result of the proposed development.

It is anticipated that there will not be any detrimental effects of the proposed development to the existing site and that it is possible for all engineering services to be catered for.

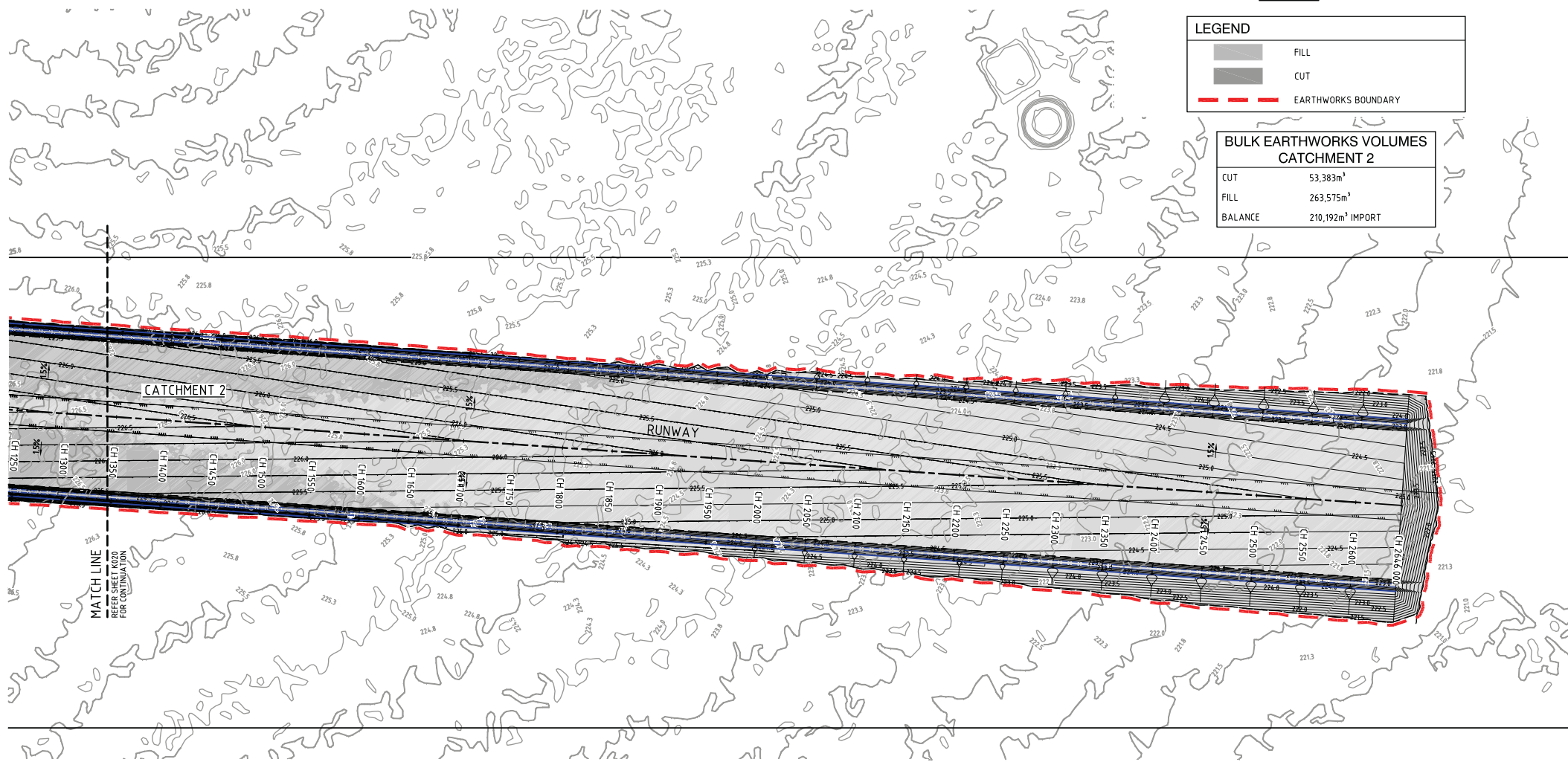
Appendix A

Engineering Drawings

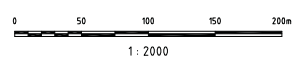


LEGEND	
	FILL
	CUT
	EARTHWORKS BOUNDARY

BULK EARTHWORKS VOLUMES CATCHMENT 2	
CUT	53,383m ³
FILL	263,575m ³
BALANCE	210,192m ³ IMPORT



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Issue	Description	By	Chd	Date

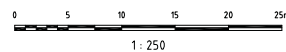
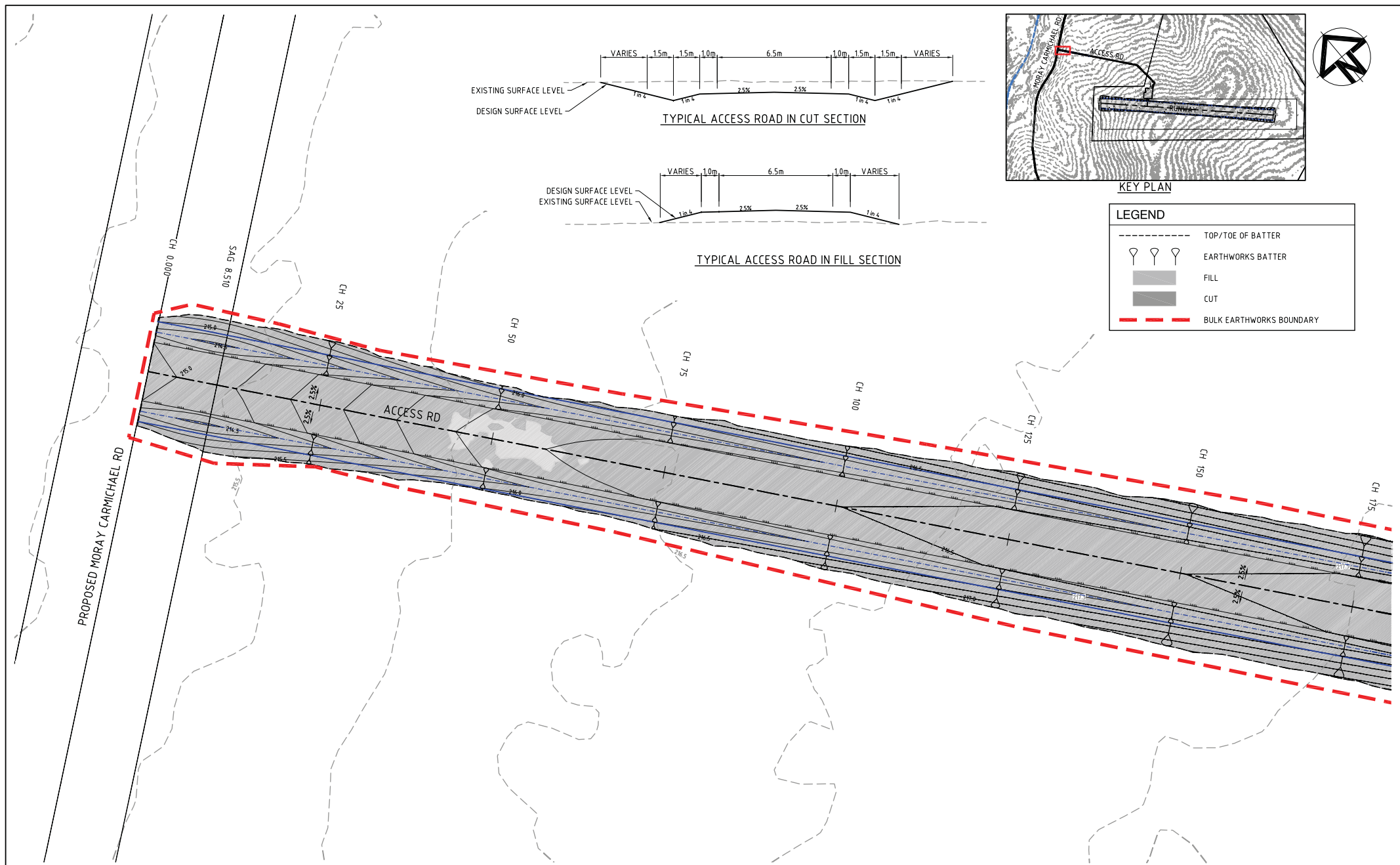
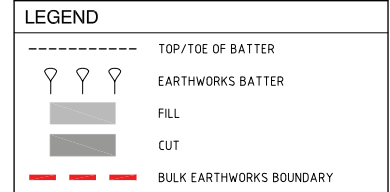
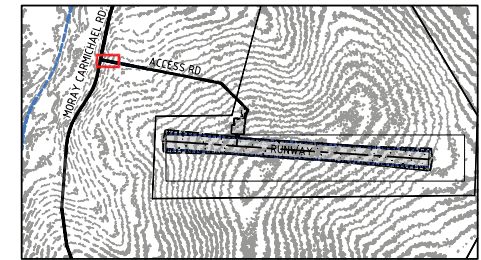
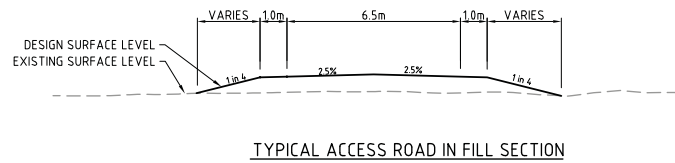


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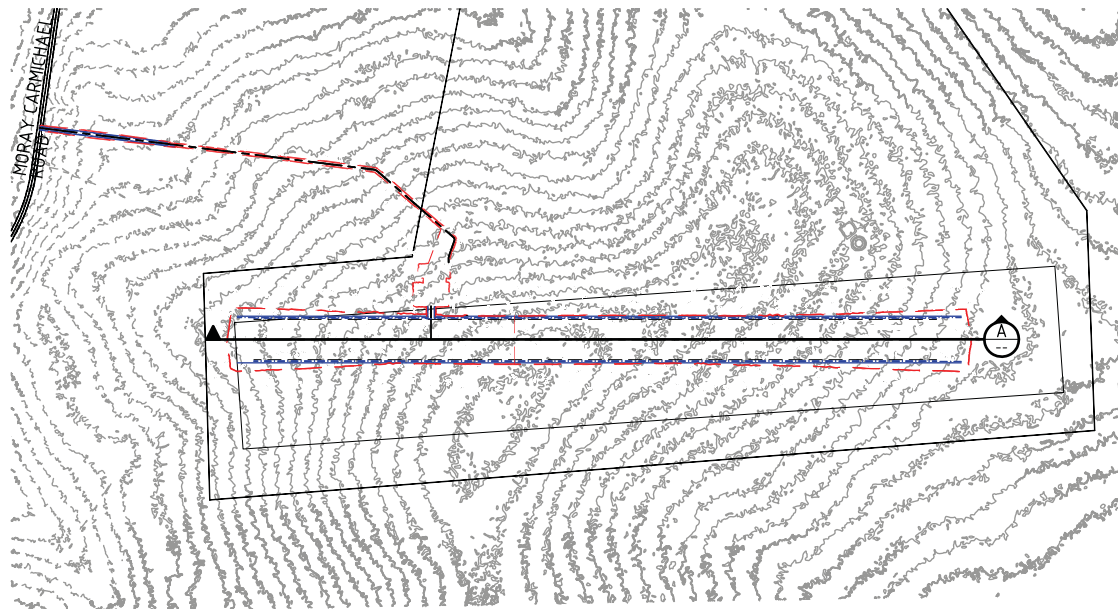
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Approved	R.P.E.O. No. ---
Scales	1:2000
Original Size	A1
Height Datum	AHD
Grid	GDA94
Current Issue Signatures	Author: T.PHAN Designer: S.EISEL Reviewer: C.HOWARD Copyright reserved

Project	CARMICHAEL MINE DEVELOPMENT
Title	AIRPORT DESIGN RUNWAY BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 2

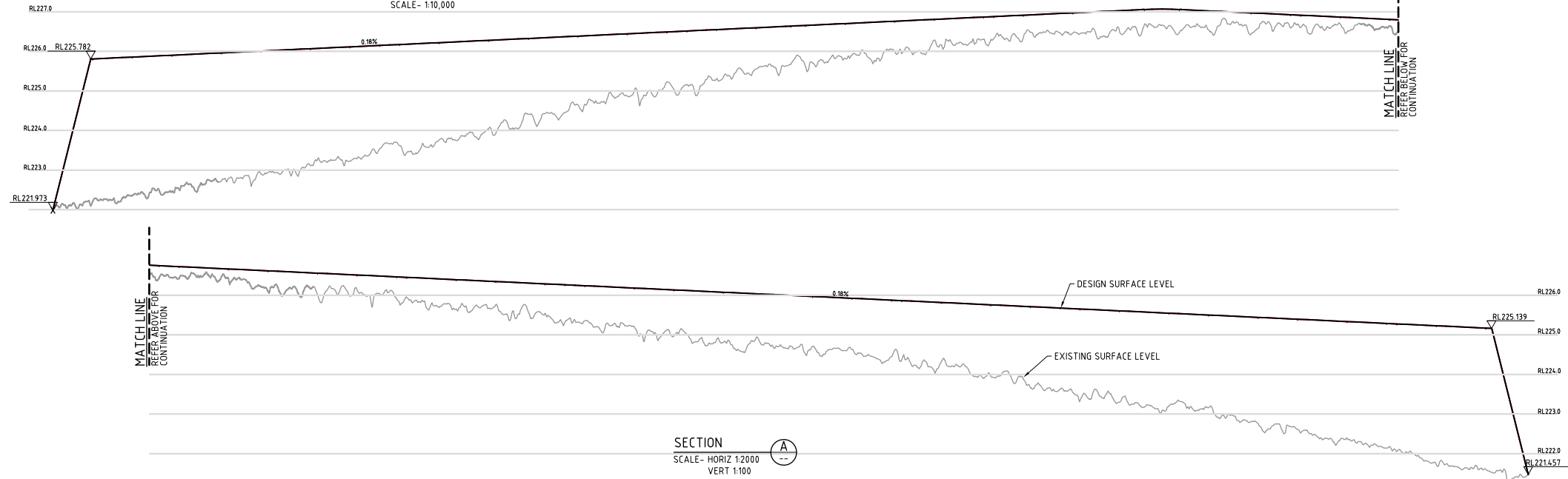
Hyder	
HYDER CONSULTING Pty Ltd ABN 76 104 485 289 Level 7, 199 Grey Street South Brisbane, QLD 4101 Australia Tel: +61 7 3337 0000 Fax: +61 7 3337 0050 Web: www.hyderconsulting.com	
Drawing No.	K021
Project No.	AA006158
Issue	A



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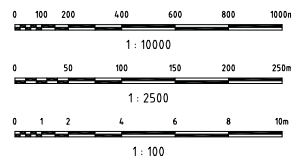


LAYOUT PLAN
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A ORIGINAL ISSUE		S.G.	S.M.	11/07/2013
Issue	Description	By	Ckd	Date



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Project	CARMICHAEL MINE DEVELOPMENT	
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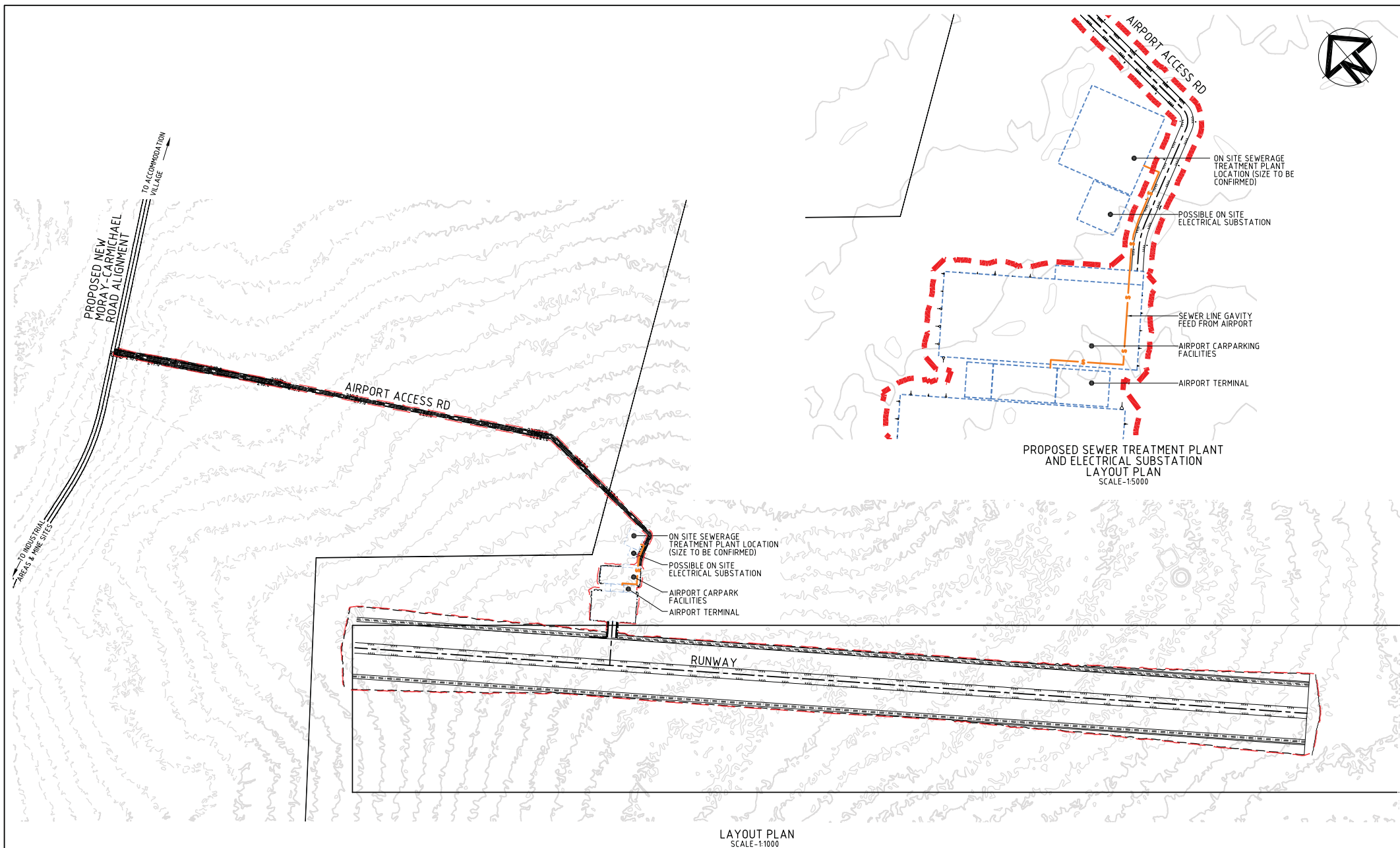


HYDER CONSULTING Pty Ltd
ABN 76 104 485 289
Level 7, 199 Grey Street
South Brisbane, QLD 4101
Australia
Tel: +61 7 3337 0000
Fax: +61 7 3337 0050
Web: www.hyderconsulting.com

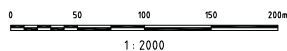
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A ORIGINAL ISSUE		S.G.	S.S.	08.07.2013
Issue	Description	By	Chd	Date



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Filename: K035-AA006158-AAD-00-AIRPORT SEWELECDWG



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Approved	R.P.E.O No : - - - -	
Scales	1:1000 1:5000	Current Issue Signatures
Original Size	A1	Author: S. GORMAN
Height	AHD	Designer: S. EISEL
Grid	GDA94	Reviewer: C. HOWARD
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Project	CARMICHAEL MINE DEVELOPMENT	
Title	<u>AIRPORT DESIGN</u> ENGINEERING SERVICES LAYOUT PLAN	

			HYDER CONSULTING Pty Ltd ABN 76 104 485 289 Level 7, 199 Grey Street Locked Bag 2017 South Brisbane, QLD 4101 Australia Tel: +61 7 3337 0000 Fax: +61 7 3337 0050 Web: www.hyderconsulting.com		
Drawing No.	Project No.	Issue			
K035	AA006158	A			

Appendix G: Stormwater Management



Adani Carmichael Mine - Airport

Site Based Stormwater Management Plan

Hyder Consulting Pty Ltd
ABN 76 104 485 289
Level 7, 199 Grey Street
South Brisbane QLD 4101
Australia
Tel: +61 7 3337 0000
Fax: +61 7 3337 0050
www.hyderconsulting.com



ADANI MINING PTY LTD

ADANI CARMICHAEL MINE - AIRPORT

Site Based Stormwater Management Plan

Airport

Author Sunny Seshadri

Checker Shane Miley

Approver Chris Howard

Report No F0006-AA006158-AAR-01

Date July 2013

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1 EXECUTIVE SUMMARY

Gassman Development Perspectives have appointed Hyder consulting on behalf of Adani Mining Pty Ltd (Adani) to undertake an assessment of the stormwater management strategy required to service the proposed Airport associated with the planned Carmichael Coal Mine. The site is located approximately 160kms west of Moranbah, Central Queensland on land described as Lot 662 on Crown Plan PH1491

This Site Based Stormwater Management Plan details the stormwater quality and quantity measures with respect to the engineering planning considerations associated with a Development Approval. The proposed development is located within the Isaac Regional Council (IRC). The site is currently being used as cattle grazing property colloquially known as 'Moray Downs'.

A Preliminary Engineering Services Report (Refer document A0003-AA006158-AAR-01-ESR Accommodation village) has also been prepared by Hyder Consulting to specifically address the engineering services and infrastructure requirements associated with the development.

2 SITE CHARACTERISTICS

2.1 EXISTING TOPOGRAPHY AND SITE DRAINAGE

The site of Airport is located approximately 160kms west of Moranbah, Queensland in the Isaac Regional Council. The development area is approximately 154.8 Ha and is situated within Lot 662 on PH1491, close to the Moray Carmichael Road.

Contours obtained from Lidar survey reveals that the site is situated at levels between RL 221.50 m AHD and 227 m AHD. The existing site topography naturally forms into two separate catchments with one catchment grading to the north-west and the other catchment grading to the south-eastern corner of the lot.

2.2 PROPOSED DEVELOPMENT

It is proposed to establish the Airport to support the mine workers working at the Carmichael Coal Mine. The developed site is to contain an airport terminal building with onsite parking facilities, a tarmac to service incoming aircrafts and a single runway with all associated services including sewerage, electricity and potable water.

The proposed development will be constructed in fill in order to incorporate the proposed stormwater catchment strategy. Refer to Engineering Drawings K020-K023 & K038-AA006158 in Appendix A for details of proposed Bulk Earthworks & Stormwater Drainage Layout.

The proposed development has incorporated water sensitive urban design measures throughout the early planning phase to ensure that all necessary stormwater quality and quantity objectives are met.

3 STORMWATER QUANTITY

3.1 OBJECTIVES

The main objective of this assessment is to demonstrate that the proposed development will not exceed pre-development peak discharge rates for a range of storm frequencies.

Appropriate stormwater detention measures are required for the developed catchment to ensure that there is no increase in peak discharge flow rates downstream. On-site detention will be designed for all storm events up to and including Q100 year ARI for the catchment. This will be done via the sizing of detention volumes and assessment using methods outlined in the Queensland Urban Drainage Manual 2008 (QUDM) and detailed below.

As mentioned previously, due to existing site topography, the existing site and proposed development will be split into 2 separate catchments 1 and 2 (refer to drawing K038-AA006158 in Appendix A for catchment details).

It is proposed to convey stormwater flows above ground in open channel drainage channels to be located to the sides of the Airport runway. Drawing K038-AA006158 indicates the locations and dimensions of these proposed open channels. Appendix D also includes open channel drainage design calculations for the Airport runway.

3.2 EXISTING CONDITION

In the existing case analysis the time of concentration for the above sub-catchment areas has been derived in accordance with QUDM (Section 4.06.6). The method used requires parameters including the length of the flow path, the catchment area and the slope of surface.

The Coefficient of Discharge for each of the sub-catchments was determined by assessing the fraction impervious of each catchment (Table 4.05.3(a) of QUDM). Using the above parameters, a combination of Friends equation and Argue (1986) (QUDM figure 4.09) was adopted to determine the time of concentration for the determination of flow rates for the catchment.

The rational method, as prescribed by QUDM Section 4.03 was then used to determine discharging flow rates for each sub-catchment for standard Average Return Intervals (ARI's) of 1, 2, 5, 10, 20, 50 and 100 years. Table 3.1 below shows a summary of results for discharge flow rates for catchment 1 and 2. Detailed Rational Method calculations are also included in Appendix D.

Table 3.1 – Existing condition Discharge Flow rates

Catchment	Area (m ²)	Q1 (m ³ /s)	Q2 (m ³ /s)	Q5 (m ³ /s)	Q10 (m ³ /s)	Q20 (m ³ /s)	Q50 (m ³ /s)	Q100 (m ³ /s)
1	15.43	1.11	1.53	2.23	2.67	3.26	4.19	4.69
2	22.82	1.45	2.00	2.91	3.50	4.26	5.47	6.13

3.3 DEVELOPED CONDITION

Similar to the existing condition, the Rational Method was used to estimate the peak flow rates discharging from the developed condition sub catchment areas of Airport. As discussed above,

the Coefficient of Discharge value for the developed site conditions was determined from Table 4.05.3(a) of QUDM.

In the developed case analysis a combined application of standard inlet times for rural residential and flow time through piped reticulation has been employed to determine the time of concentration (QUDM Sections 4.06.5 and 4.06.7).

Due to the flat grades expected across the development area of Airport, pipe drainage is expected to be limited to cross culverts utilised under roadways and footpaths to maintain trafficability during lower ARI events.

A summary of the results of the 1, 2, 5, 10, 20, 50 and 100 year ARI developed peak flow rates (without detention) from the contributing sub catchment areas 1 and 2 of Airport are provided in Table 3.2 below.

Table 3.2 – Developed condition Discharge Flow rates

Catchment	Area (m ²)	Q1 (m ³ /s)	Q2 (m ³ /s)	Q5 (m ³ /s)	Q10 (m ³ /s)	Q20 (m ³ /s)	Q50 (m ³ /s)	Q100 (m ³ /s)
1	15.43	0.42	0.58	0.85	1.02	1.24	1.60	1.87
2	22.82	0.56	0.77	1.12	1.34	1.63	2.11	2.47

In the absence of adequate controls, urban development can increase stormwater runoff volume and peak discharge rates. Such increases can aggravate downstream flooding, initiate creek erosion and cause the degradation of downstream environmental values. One of the main objectives is to limit property flooding to acceptable levels. The use of stormwater detention/retention systems is one means of achieving this objective (QUDM 2008).

3.4 PRELIMINARY ONSITE DETENTION

A preliminary assessment of the on-site detention storage requirements for the proposed Airport development area has been carried out using the initial sizing techniques outlined in Section 5.05.1 of QUDM. Based on the comparison of results outlined in Section 3.2 and 3.3 above, it will be necessary to incorporate on-site detention storage in order to maintain peak outflows equivalent to the existing conditions.

The on-site detention storage proposed for the site will be sized to maintain the equivalent pre-developed condition peak flows for local catchment rainfall events up to and including the 100 year ARI rainfall event. To control the peak rates of discharge from the nominated storage volume it will be necessary for the outlet arrangements to be designed to maintain the existing peak flows.

A comparison of the existing and developed condition peak flows for the Airport site indicated that the 100 year ARI storm event resulted in the greatest increase in peak discharge. The results of the preliminary on-site detention analysis indicate that a minimum detention storage volume of approximately 8,200m³ for catchment 1 and 13,000 m³ catchment 2 will be required to detain the increase in the 100 year ARI discharge and maintain the equivalent pre-developed 100 year ARI peak flow discharging off site.

It should be noted that the volume outlined may be subject to change if the final catchment areas differ from those adopted for this assessment. The stage storage characteristics and

outlet configuration of the detention basin will also be verified as part of the detailed design of the civil works for Airport.

In accordance with Section 5.11 of QUDM it is recommended that any ponding within the basin should be limited to 1.2 metres at the deepest point above the basin invert. For deeper basins, suitable safety provisions (such as refuge mounds within large basins, fences and warning signs) should be provided.

Detailed stormwater detention calculations area included in Appendix D.

3.5 FLOOD IMMUNITY

As discussed in section 2.1 above, the Airport site is located on a natural ridge with levels across the site ranging from 221.5m AHD to 227m AHD.

The nearest likely source of flooding to the development is Eight Mile Creek which runs approximately 1.1km to the north of the subject site. Given that the invert level of Eight Mile Creek in this area is below 213m AHD (over 8m below the lowest existing level at the Airport site), it is not envisaged that flood inundation will occur over the development as a result of waterway flooding.

It is recommended that further investigations into flood levels from Eight Mile Creek are carried out at detailed design stage and that minimum floor levels are set based on these findings.

4 STORMWATER QUALITY

4.1 ENVIRONMENTAL VALUES AND WATER QUALITY OBJECTIVES (WQO)

Water quality parameters and the proposed limits applicable for this site have been selected in accordance with the State Planning Policy Healthy Waterways (4/10). The Water Quality Indicator Values stipulated by Council are as follows:

Table 4.1: Construction Phase Performance Criteria

Pollutant	Criteria
Total Suspended Solids	90 th %ile <50mg/L
pH	6.5 – 8.5
Dissolved Oxygen	90 th %ile > 6mg/L
Hydrocarbons	No visible sheen on receiving waters
Litter	No visible litter washed from site

Table 4.2 Water Quality Operational Phase Performance Criteria

The Queensland State Planning Policy for Healthy Waters (SPP 4/10) (2011) is the statutory instrument that expresses the State's interest in protecting water quality environmental values and provides guidelines for planning, assessment and approval of proposed development.

The SPP 4/10 identifies the procedures provided in Chapter 2 of the Urban Stormwater Quality Planning Guidelines (2010) as the required approach to stormwater planning.

Therefore, in accordance with Table 2.2 of the Urban Stormwater Quality Planning Guidelines(2010), the design objectives for the management of Stormwater quality for the operational phase of development have been identified as per Table 12.2 below:

- 85% reduction in Total Suspended Sediment (TSS);
- 45% reduction in Total Nitrogen (TN);
- 70% reduction in Total Phosphorus (TP); and
- 90% reduction in litter or Gross Pollutants sized 5 mm or greater (GP).

Water quality parameters which are to be protected during the construction and operational phase of this development have been adopted to match the Water Quality Objectives listed above.

During the construction phase, the most significant water quality objective will be that of suspended solids. To eliminate any environmental harm that may occur it is proposed that

runoff from the disturbed areas will be directed to the proposed detention basins which will act as temporary sediment basins. These temporary works will be installed at the start of construction to contain most of the treatment within the site.

During the operational phase, the most significant pollutant for a development will be litter, oils and nutrients namely phosphorous and nitrogen. A combined treatment train of rainwater tanks and bio-retention systems is proposed to appropriately control the quality of the stormwater runoff from the site.

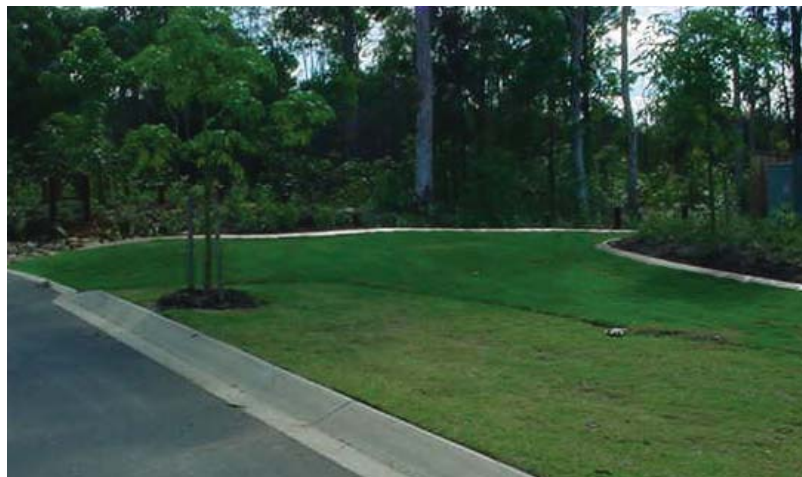
4.2 PROPOSED STORMWATER IMPROVEMENT DEVICES (OPERATIONAL PHASE)

Water Sensitive Urban Design (WSUD) aims to minimise the impact of a development on the natural water cycle by reducing the export of pollutants, sediments and nutrients from the site into the natural watercourse. The following section provides general details of the stormwater treatment concepts of devices proposed to be employed within the development. Details of the specific modelling inputs and required dimensions and specifications of the devices are provided in Section 4.3.

4.2.1 TURF BUFFER STRIPS / VERGES

Buffers are usually fully turfed areas that are constructed between the road pavement, allotment, swales or bio-retention systems. These areas provide treatment of the stormwater runoff by primarily removing suspended solids, litter and gross pollutants. These devices also have ability to remove some oils and greases.

Figure 4.1 – Turfed Buffer Strips



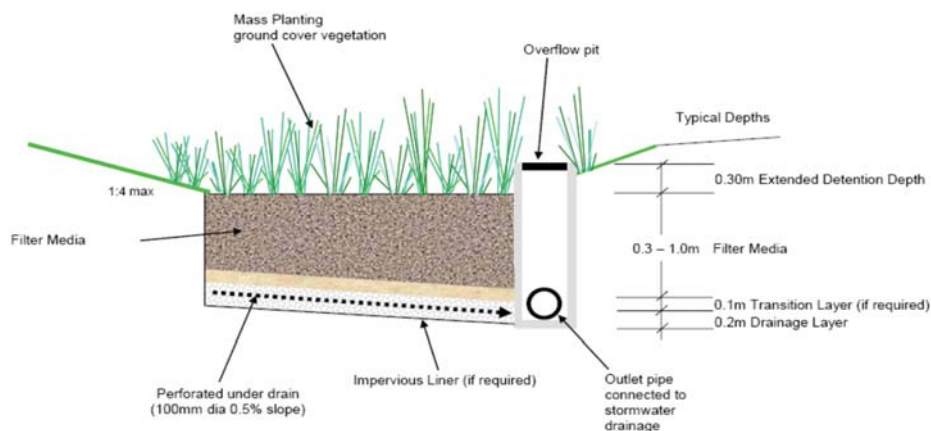
Where possible, buffer strips are to be included in landscaping areas to receive lateral sheet flow from impervious areas prior to collection by the stormwater reticulation. Buffer strips have not been included in the stormwater quality modelling of the subject site, as the exact locations and efficiency are subject to detailed landscape design.

4.2.2 BIO-RETENTION AREAS

A bio-retention basin is a vegetated area where runoff is filtered through a filter media layer (e.g. sandy loam) as it percolates downwards. It is then collected via perforated under-drains and flows to downstream waterways or to storages for re-use. Bio-retention basins operate by filtering stormwater runoff through densely planted surface vegetation and then percolating runoff through a prescribed filter media.

The type of filter media determines the effectiveness of the pollutant removal, with material of lower hydraulic conductivity providing the most efficient pollutant removal. Bio-retention systems aid in the removal of suspended solids, total Phosphorus and total Nitrogen.

Figure 4.2 – Bio-Retention Typical Cross Section (courtesy of Healthy Waterways)



The stormwater treatment efficiency of the proposed bio-retention areas has been modelled as part of the overall treatment train. Details of the modelling inputs and specifications of the bio-retention areas are presented in Section 4.3.

4.2.3 RAINWATER TANKS

Rainwater tanks behave as stormwater quality improvement devices by removing stormwater from the treatment train which is used for irrigation, toilet flushing and various other non-potable uses. It is therefore considered appropriate to assume and model a volume of rainwater capture and re-use in the assessment of stormwater quality and treatment train effectiveness.

4.2.4 STORMWATER QUALITY IMPROVEMENT DEVICES (SQID)

Proprietary stormwater quality improvement devices are predominantly used to remove gross pollutants and most suspended solids. They are most useful in circumstances where usable space is restricted for the treatment of stormwater on site. SQID devices have not been included in the stormwater quality modelling of the proposed development.

4.3 STORMWATER QUALITY MODELLING (MUSIC)

Modelling of the site was undertaken using the 'Model for Urban Stormwater Improvement Conceptualisation (MUSIC)' as promoted by the South East Queensland Healthy Waterways Partnership. An appropriate type of land use was applied to the developed catchment and a treatment system was assigned within the relevant modelling treatment parameters.

Meteorological data for input to MUSIC was obtained from the Bureau of Meteorology. Six-minute time step rainfall data was obtained from the year 1997 to 2006.

The catchment parameters of the MUSIC modelling were amended in accordance with the South East Queensland Healthy Waterways Partnerships' Water by Design MUSIC Modelling Guidelines for South East Queensland Version 1 (2010).

4.3.1 POLLUTANT SOURCE NODE DETAILS

Table 4.3 and 4.4 below show the pollutant source node parameters which were input in the MUSIC model.

Table 4.3 Rainfall – Runoff Parameters

	Industrial
Rainfall Threshold (mm)	1
Soil Storage Capacity (mm/day)	18
Initial Storage (%)	10
Field Capacity (mm)	80
Infiltration Capacity Coefficient - a	243
Infiltration Capacity Coefficient - b	0.6
Initial Depth (mm)	50
Daily Recharge Rate (%)	0
Daily Baseflow Rate (%)	31
Daily Seepage rate (%)	0

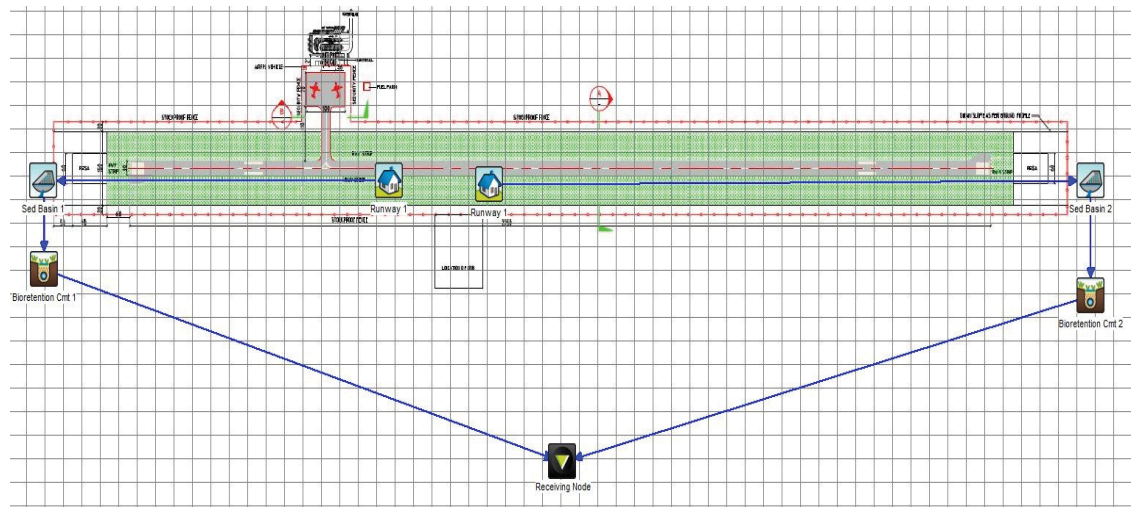
Table 4.4 Rainfall – Lumped Runoff Parameters

		Industrial
TSS Base Flow	Mean (log mg/L)	0.78
	Std Dev (log mg/L)	0.45
TSS Storm Flow	Mean (log mg/L)	1.92
	Std Dev (log mg/L)	0.44
TP Base Flow	Mean (log mg/L)	-1.11
	Std Dev (log mg/L)	0.48
TP Storm Flow	Mean (log mg/L)	-0.59
	Std Dev (log mg/L)	0.36
TN Base Flow	Mean (log mg/L)	0.14
	Std Dev (log mg/L)	0.20
TN Storm Flow	Mean (log mg/L)	0.25
	Std Dev (log mg/L)	0.32

4.3.2 TREATMENT TRAIN DETAILS

Once the site is fully developed, the stormwater run-off from the developed site will be collected via a series of drainage systems and overland flow paths, eventually discharging into the bio-retention area. The layout of the site and the proposed drainage pattern were considered in the creation of the MUSIC model. Figure 4.3 below presents the layout of source, treatment and receiving nodes used in the modelling.

Figure 4.3 – MUSIC Model Layout



4.3.2.1 Bio-Retention Basin Details

A bio-retention basin is proposed within each catchment of the development. It is proposed that these basins treat the stormwater runoff from the car parking areas, hardstand areas and roofs within the Airport. The modelled parameters of the bio basin for MUSIC are as follows:

Table 4.5 Bio-Retention Basin Details

	Surface Area (m ²)	Ext Detention Depth (m)	Filter Area (m ²)	Filter Media Depth (m)
Bio Basin 1	1650	0.2	1600	0.6
Bio Basin 2	2180	0.2	2000	0.6

The basins sides shall be battered at max. 1:4 (V:H). Landscaping of the basin areas shall be in accordance with a suitably approved Landscape Design.

The bio-retention basin is made up of the following layers (from the bottom of the basin to the top of the batters):

1. 200mm drainage layer with 100mm slotted drainage pipes;
2. 100mm transition layer;
3. 600mm filter media layer (100 mm/hour saturate hydraulic conductivity);
4. 200mm extended detention layer;
5. 300mm freeboard to the top of batters; and
6. All batters are to be at 1:4.
7. Total Nitrogen content in filter media – 800 mg/kg
8. Total orthophosphate content in filter media – 45 mg/kg

4.3.2.2 Coarse Sediment Forebays

Due to the location and nature of dispersive soils in the area, coarse sediment forebays have been implemented to assist in achieving the water quality objectives. Table 4.6 below summarises the parameters of the sediment forebays:

Table 4.6 – Coarse Sediment Forebays Details

Catchment	Area (m ²)	Depth (mm)	Extended detention (mm)	Permanent Pool volume (m ³)	Exfiltration rate (mm/hour)	Evaporative Loss	Outlet pipe diameter (mm)	Weir width (m)
1	150	300	500	45	0	125	375	2
2	180	300	500	54	0	125	375	2

4.3.3 MUSIC MODELLING RESULTS

The proposed stormwater treatment train has been modelled in MUSIC to assess the load reduction achievements and to ensure that the operational phase performance criteria is met in accordance with Table 4.2. The results of the of the MUSIC modelling exercise are presented below:

Figure 4.4 – MUSIC Model Results

Treatment Train Effectiveness - Receiving Node			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	73.7	67.2	8.8
Peak Flow (m3/s)	7.85	9.12	-16.2
Total Suspended Solids (kg/yr)	25.3E3	3.80E3	85.0
Total Phosphorus (kg/yr)	41.6	11.6	72.1
Total Nitrogen (kg/yr)	158	80.4	49.1
Gross Pollutants (kg/yr)	1.86E3	0.00	100.0

The above table shows that the load-reduction targets shown for the development have been achieved. Therefore, sufficient consideration of stormwater controls has been made at this conceptual stage of the development to demonstrate:

- Compliance with QUDM;
- Compliance with the State Planning Policy 4/10 Healthy Waterways; and
- Ecological sustainability in terms of the development's impact upon receiving waters; and the viability of the proposed site development.

4.4 CONSTRUCTION PHASE

During the construction phase of the development, an Erosion and Sediment Control Program will be implemented to minimise water quality impacts. A detailed Erosion and Sediment Control Program will be employed throughout the site. The sediment control measures shall include a temporary sediment basin, silt fences and diversion channels for clean stormwater run-off.

The following sections details the construction phase requirements to ensure the protection of stormwater quality.

4.4.1 PRE-CONSTRUCTION

- Designating and delineating buffer strips adjacent to the existing vegetation to be retained and Protected Vegetation Zones. No plant operations will occur within the buffer strips.
- Sediment fences are to be constructed on the upstream edges of the designated buffer strips and at the base of fill embankments.
- Areas for plant and construction material storage are to be designated along with associated diversion drains and spillage holding ponds.
- Diversion banks are to be created at the upstream boundary of construction activities to ensure upstream runoff is diverted around any exposed areas. Catch drains are to be created at the downstream boundary of construction activities.
- Silt fences and/or sand bags are to be placed along the catch drains to slow runoff, reduce scour and capture some sediment from runoff.
- Construction of a temporary sediment basin at the location of the prescribed bio-retention and detention basins.
- Site personnel are to be educated on the sediment and erosion control measures implemented on site.

4.4.2 DURING CONSTRUCTION

- Progressive re-vegetation of filled areas and batters.
- Construction activities are to be confined to the necessary construction areas.
- The provision of a 'vehicle shakedown' to prevent the tracking of debris from tyres of vehicles onto public roads. Only one construction exit will be nominated to limit the movement of construction equipment.
- The topsoil stockpile location will be nominated to coincide with areas previously disturbed. A sediment fence is to be constructed around the bottom of the stockpile to trap sediment. A diversion drain is to be installed upstream of the stockpile if required.
- Regular inspection and maintenance of silt fences, sediment basins and other erosion control measures. Following rainfall events greater than 50mm inspection of erosion control measures and removal of collected material should be undertaken. Replacement of any damaged equipment should be performed immediately.

It is important to note that the proposed bio-retention and detention basins can serve as a temporary sediment basin during the construction stage of the development.

4.4.3 POST CONSTRUCTION

The Contractor/Developer will be responsible for the maintenance of erosion and sediment control devices from the possession of the site until stabilisation has occurred to the satisfaction of the superintendent and Council. Key stormwater quality improvement devices requiring maintenance during the operational phase of the project following construction are the grassed buffer areas and the bio-retention areas.

Maintenance requirements for these devices consist of:

- Regular inspections;
- Ensure sufficient vegetation within verges, swales and bio-retention areas;
- No erosion has occurred;
- Regular mowing/harvesting to ensure vegetation is maintained at acceptable levels; and
- Removal of litter within verges, swales and bio-retention areas;

4.5 WATER QUALITY MONITORING PROGRAM

This development does propose the use of water sensitive practices and the associated stormwater quality management practices at the outlet areas.

In compliance with the State Planning Policy 4/10 Healthy Waters the proposed development must achieve the objectives outlined above during the construction phase of development.

By adopting the recommended actions and responses to specific activities, the monitoring and reporting, and the construction of the control measures as outlined in this report, these objectives should be suitably achieved by the Contractor.

Records of release of sediment-laden stormwater from the site and inspection records will be developed. It is intended that each release resulting from a storm event generating more than 100mm in a twenty-four hour period shall be recorded to ensure ongoing monitoring, management and reporting of releases from the site.

5 CONCLUSION

The Site Based Stormwater Management Plan has been prepared to provide a design proposal and guide to the stormwater quantity and quality management techniques for the proposed Airport. This report includes details for the stormwater modelling that predicts the peak runoff within the site. Sufficient consideration for stormwater controls has been made at this preliminary design stage of the development to demonstrate the main objectives of this SMP, being:

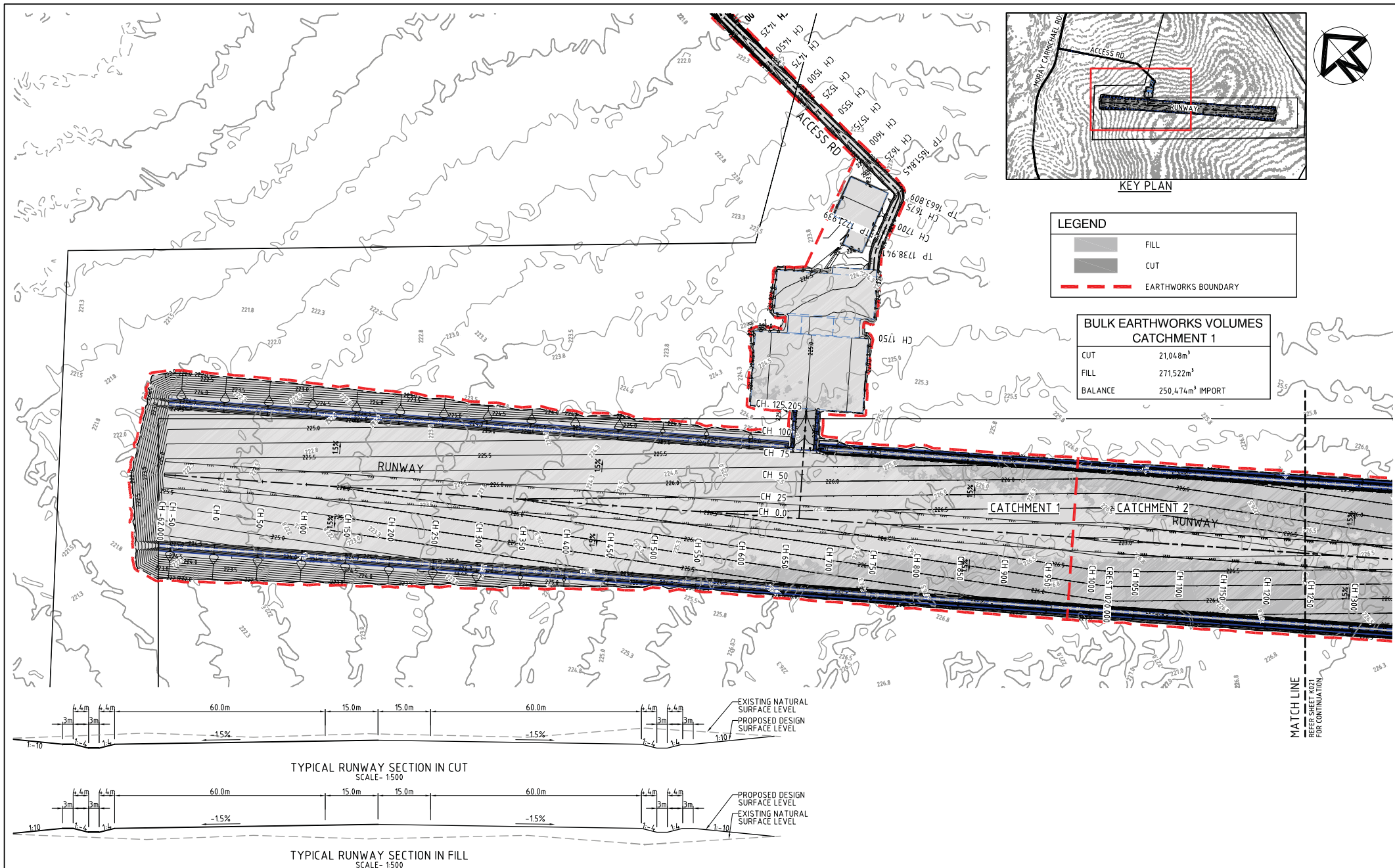
1. The existing stormwater runoff from catchments 1 and 2 are maintained and where necessary, suitable measures are incorporated in the development to ensure that there is no environmental impacts resulting from an increase to peak discharging stormwater flow rates as a result of the development.
2. Details of the proposed stormwater quality treatment are provided to ensure the discharge of stormwater from the site is of adequate quality to comply with the requirements of State Planning Policy Urban Development pollutant reduction targets.

The hydrological assessment determined that there would be an increase in stormwater runoff as a result of the development. The resultant increase will be negated by the use of a detention basin as specified within this report. As such, the developed site will not affect the peak flows on the downstream infrastructure.

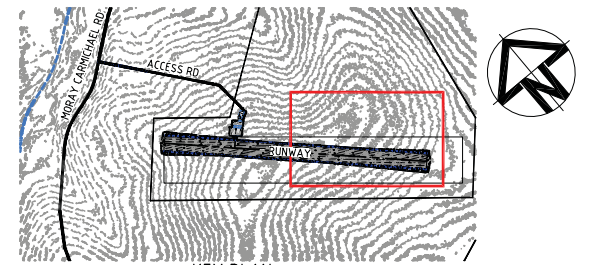
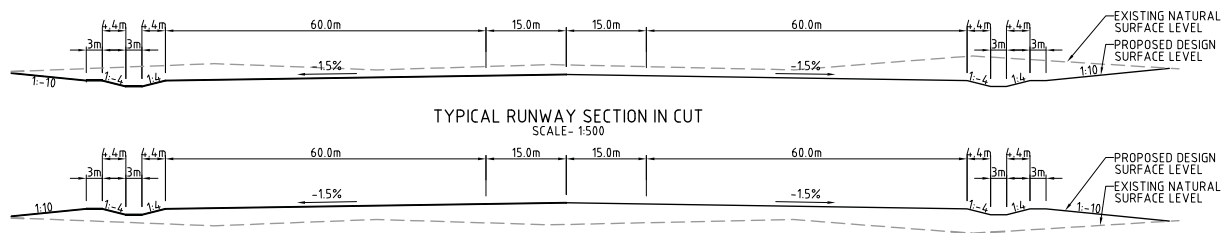
This document illustrates that sufficient treatment of stormwater runoff for quality requirements in accordance with Water Sensitive Urban Design principles will be achieved through the use of various treatment devices at different phases of the development.

APPENDIX A

ENGINEERING DRAWINGS

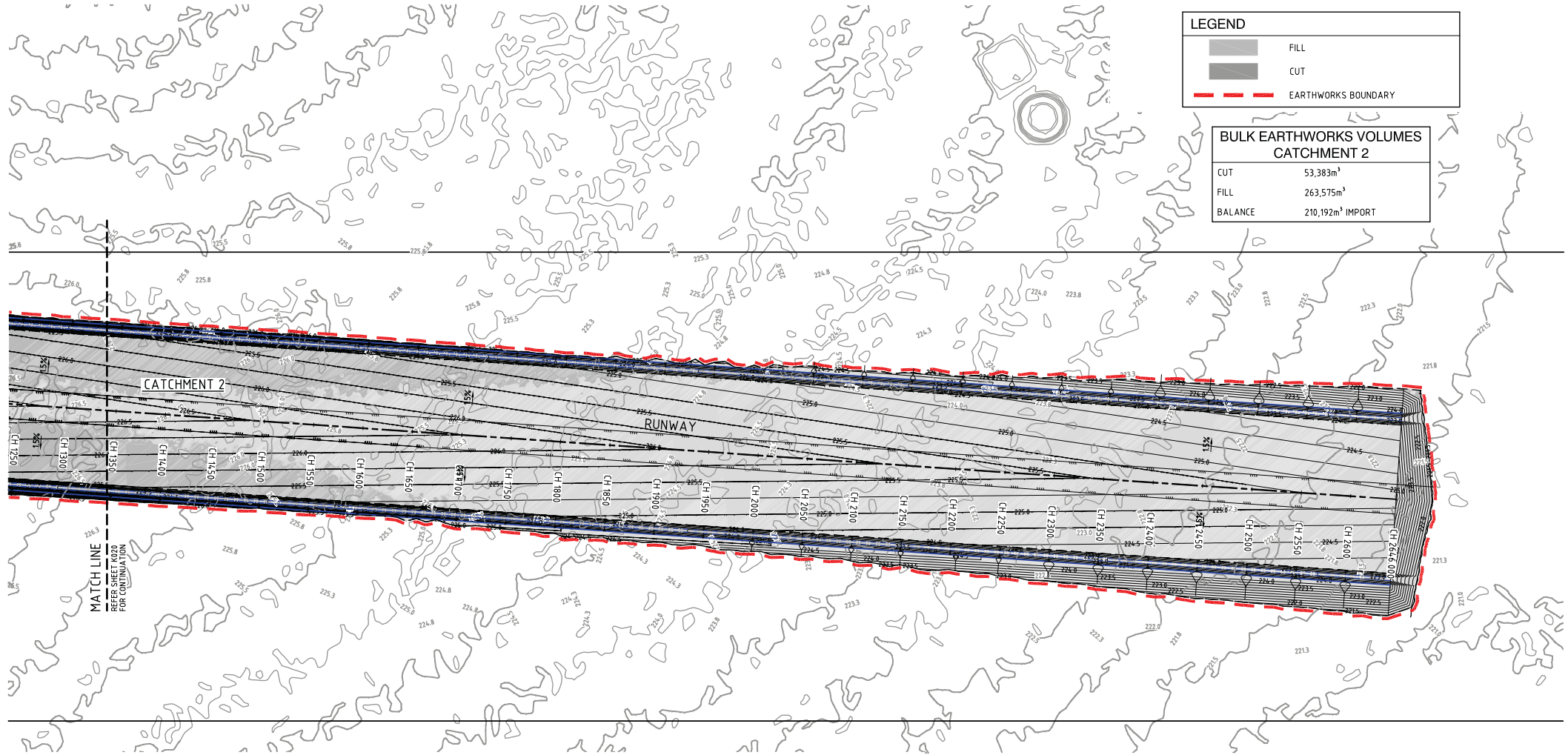


					Surveyor		Client						Status PRELIMINARY NOT TO BE USED FOR CONSTRUCTION Approved R.P.E.Q No: - - - - Scales 1: 2000 Original Size A1 Height AHD Grid GDA94 Current Issue Signatures Author T. PHAN Designer S. EISEL Reviewer C. HOWARD © Copyright reserved				Project CARMICHAEL MINE DEVELOPMENT Title AIRPORT DESIGN RUNWAY BULK EARTHWORKS LAYOUT PLAN SHEET 1 OF 2				 HYDER CONSULTING Pty Ltd ABN 76 104 485 289 Level 7, 199 Grey Street Locked Bag 2017 South Brisbane, QLD 4101 Australia Tel: +61 7 3337 0000 Fax: +61 7 3337 0050 Web: www.hyderconsulting.com			
A ORIGINAL ISSUE			T.P S.M 26.06.2019		Filename: K020-AA006158-AA0-00-BULK AIRPORT.DWG								Drawing No. K020 Project No. AA006158 Issue A											
Issue Description			By Chd Date																					

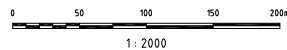


LEGEND	
	FILL
	CUT
	EARTHWORKS BOUNDARY

BULK EARTHWORKS VOLUMES CATCHMENT 2	
CUT	53,383m ³
FILL	263,575m ³
BALANCE	210,192m ³ IMPORT



A	ORIGINAL ISSUE	T.P.	S.M.	26.06.2019
Issue	Description	By	Chd	Date



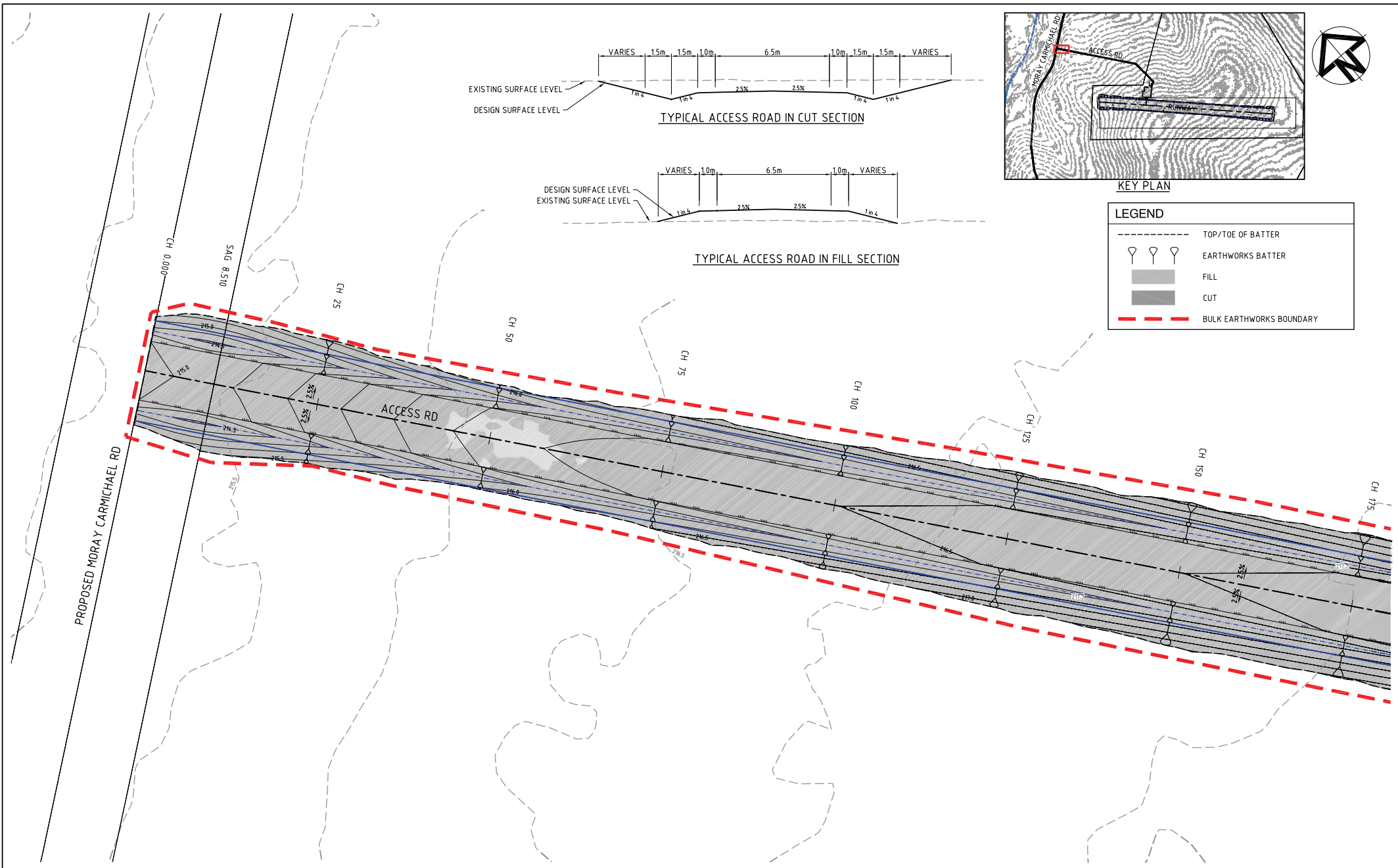
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Scales	1 : 2000
Original Size	A1
Height Datum	AHD
Grid	GDA94

Project	CARMICHAEL MINE DEVELOPMENT
Title	AIRPORT DESIGN RUNWAY BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 2

		HYDER CONSULTING Pty Ltd ABN 76 104 485 289 Level 7, 199 Grey Street South Brisbane, QLD 4101 Australia Tel: +61 7 3337 0000 Fax: +61 7 3337 0050 Web: www.hyderconsulting.com
Drawing No.	Project No.	Issue
K021	AA006158	A



					Surveyor	Client				StatusPRELIMINARY NOT TO BE USED FOR CONSTRUCTION ApprovedR.P.E.Q No. : - - - - Scales1 : 250 Original SizeA1 Height DatumAHD GridGDA94 Current Issue Signatures AuthorT.PHAN DesignerS. EISEL ReviewerC. HOWARD © Copyright reserved 10/Jul/2013 4:40 PM		ProjectCARMICHAEL MINE DEVELOPMENT TitleAIRPORT DESIGN TYPICAL ACCESS ROAD LAYOUT PLAN SHEET 1 OF 2		 HYDER CONSULTING Pty Ltd ABN 76 104 485 289 Level 7, 199 Grey Street Locked Bag 2017 South Brisbane, QLD 4101 Australia Tel: +61 7 3337 0000 Fax: +61 7 3337 0050 Web: www.hyderconsulting.com Drawing NoK023 Project NoAA006158 IssueA	
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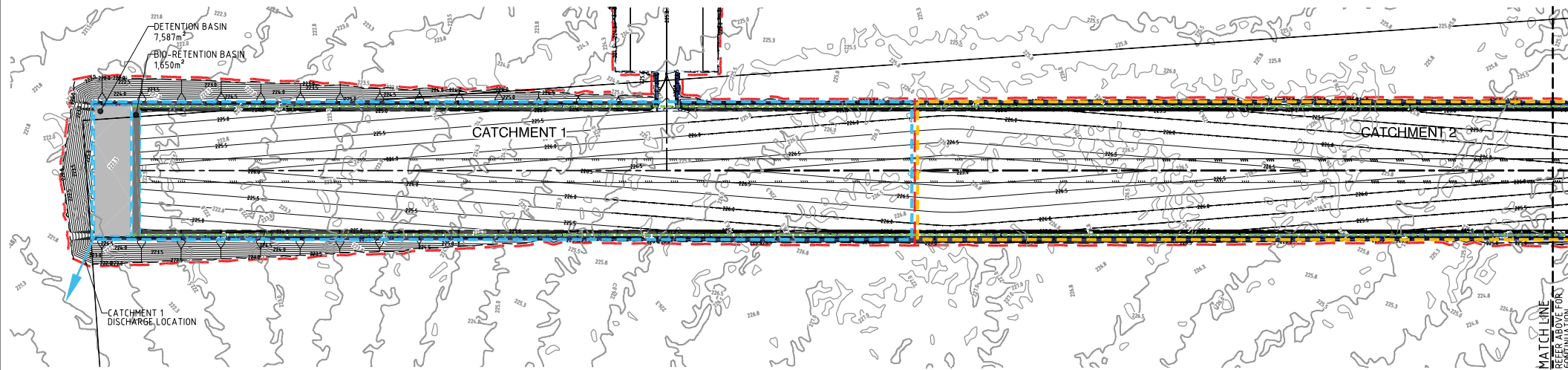
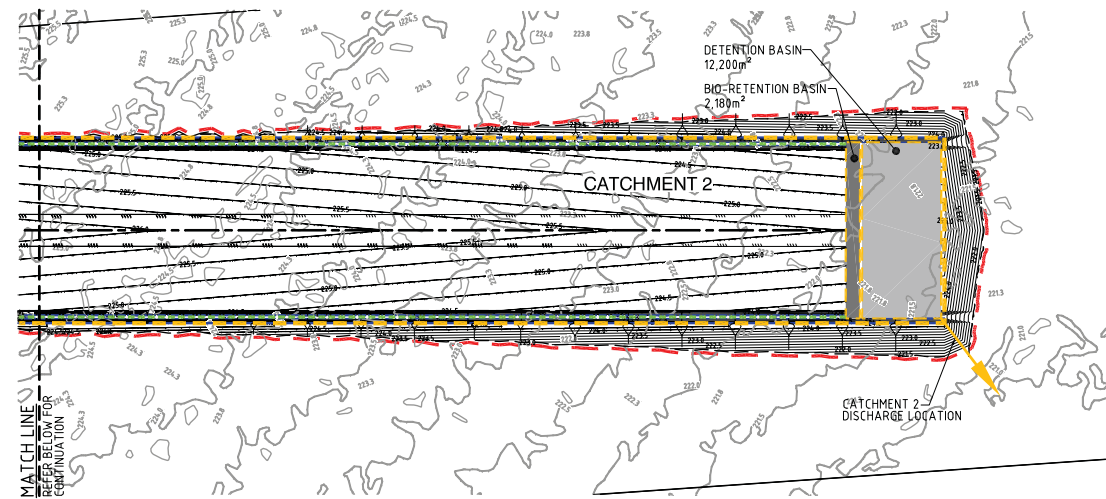
LEGEND

CATCHMENT 1 BOUNDARY

CATCHMENT 2 BOUNDARY

11m WIDE DRAINAGE CHANNEL

SITE BOUNDARY



A

ORIGINAL ISSUE

Issue

Description

By

Chd

Date

S.G.

S.M.

10.07.2013

20m on Original

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50

100

150

200

250m

1 : 2500

Surveyor

Client

Status

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

Approved

R.P.E.O No : - - - -

Scales

1 : 2500

Original Size

A1

Height Datum

AHD

Grid

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Current Issue Signatures

Author
T.PHAN

Designer
S. EISEL

Reviewer
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Project

CARMICHAEL MINE DEVELOPMENT

Title

AIRPORT DESIGN
AIRPORT STORMWATER
MANAGEMENT
LAYOUT PLAN

Drawing No.

K038

Project No.

AA006158

Issue

A

HYDER CONSULTING Pty Ltd

ABN 76 104 485 289

Level 7, 199 Grey Street

Locked Bag 2017

South Brisbane, QLD 4101

Australia

Tel: +61 7 3337 0000

Fax: +61 7 3337 0050

Web: www.hyderconsulting.com

Hyder

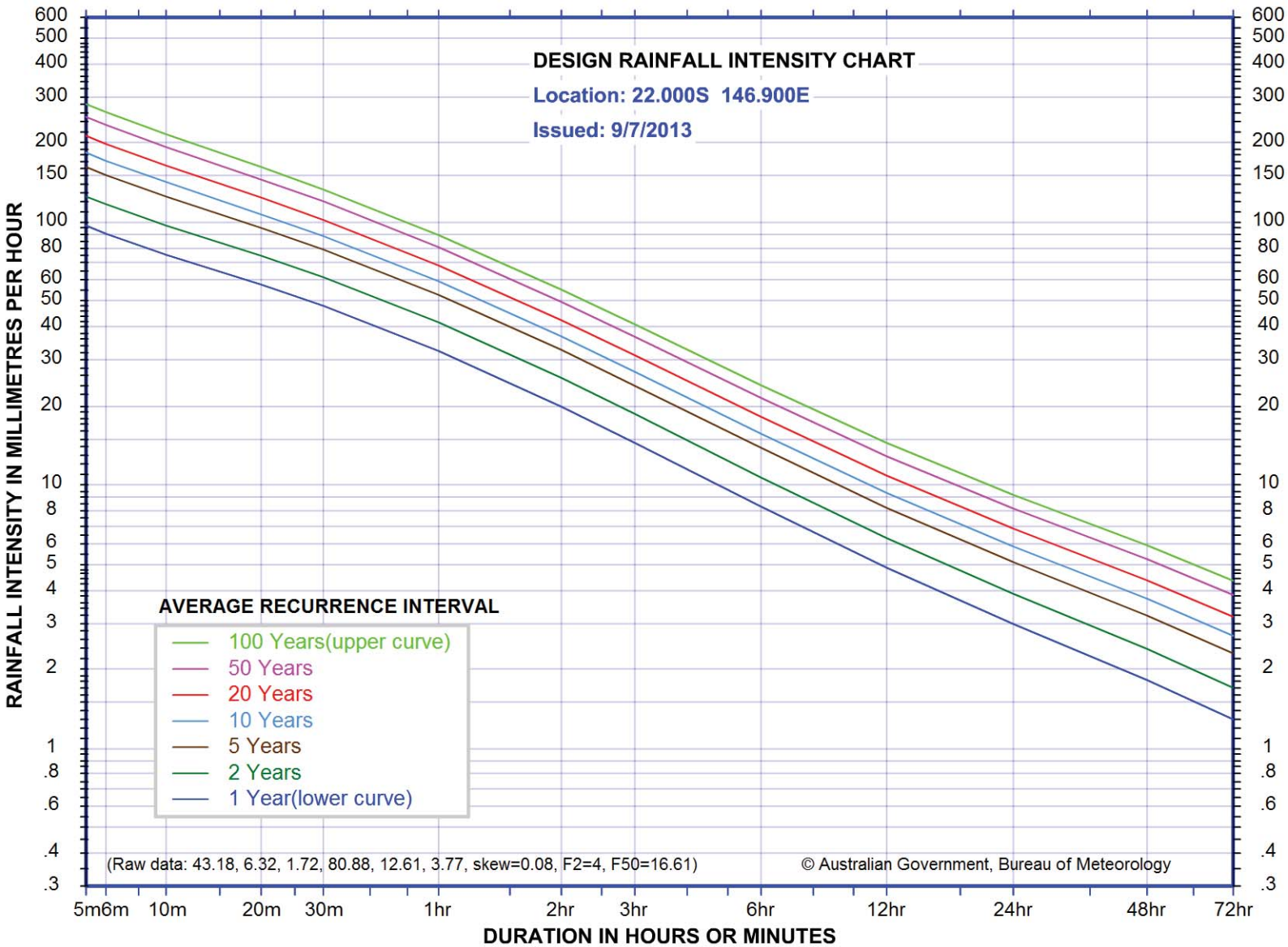
10 / Jul / 2013 6:13 PM

\\VHC-AUS-BN-FS-01\Jobs\AA006158\E-CAD\VC-Civil\B-Sketches\K038-AA006158-AA0-00-CATCHMENT AIRPORT.dwg

V1

APPENDIX B

SITE SPECIFIC IFD CHARTS



Intensity-Frequency-Duration Table

Location: 22.000S 146.900E Issued: 9/7/2013

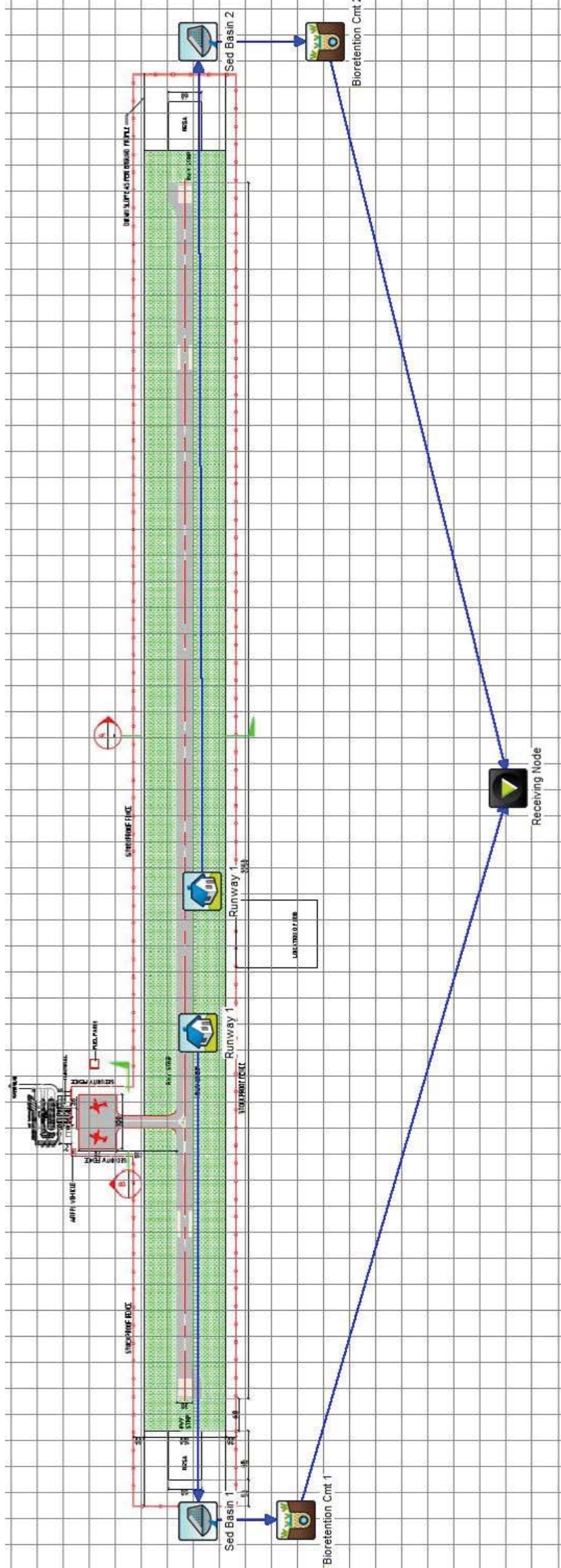
Rainfall intensity in mm/h for various durations and Average Recurrence Interval

Average Recurrence Interval							
Duration	1 YEAR	2 YEARS	5 YEARS	10 YEARS	20 YEARS	50 YEARS	100 YEARS
5Mins	97.0	125	162	184	213	251	281
6Mins	90.3	117	151	171	198	234	262
10Mins	75.2	97.1	125	142	164	193	216
20Mins	57.9	74.5	95.1	107	124	145	162
30Mins	48.1	61.8	78.7	88.6	102	120	133
1Hr	32.4	41.6	52.9	59.6	68.5	80.3	89.3
2Hrs	19.9	25.6	32.7	36.8	42.4	49.8	55.4
3Hrs	14.5	18.7	23.9	27.0	31.2	36.7	40.9
6Hrs	8.31	10.7	13.9	15.7	18.2	21.5	24.0
12Hrs	4.86	6.30	8.21	9.36	10.9	12.9	14.5
24Hrs	2.97	3.87	5.11	5.86	6.85	8.17	9.20
48Hrs	1.82	2.39	3.20	3.71	4.35	5.24	5.92
72Hrs	1.29	1.70	2.30	2.68	3.17	3.83	4.34

(Raw data: 43.18, 6.32, 1.72, 80.88, 12.61, 3.77, skew=0.08, F2=4, F50=16.61) © Australian Government, Bureau of Meteorology

APPENDIX C

MUSIC MODELLING LAYOUT



APPENDIX D

CALCULATIONS



Project: Adani Carmichael
Project No.: AA006158
Designer: SM
Date: 3/07/2013

Rational Method Calculations

Project

Description

Time of Concentration minutes

Area of Catchment Hectares

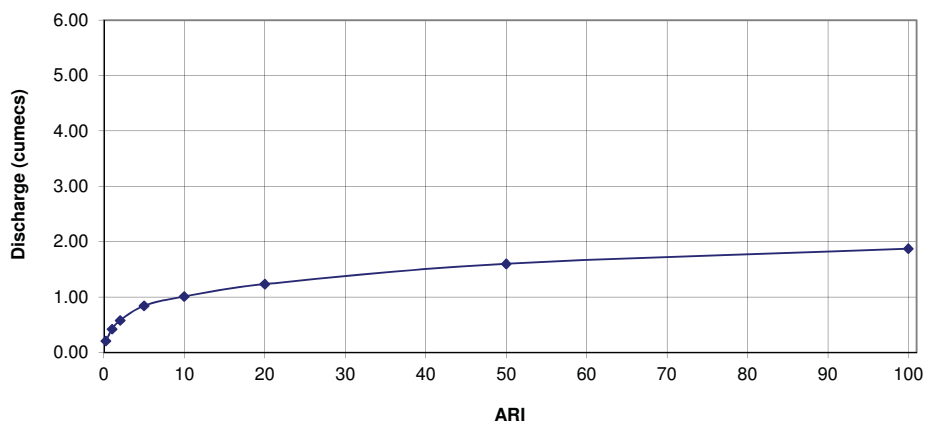
Fraction Impervious

Council Chart No.

Council Name

ARI	C value	Rainfall Intensity (mm/hr)	Discharge (m ³ /s)	Comments
3 _{month}			0.21	Write anything here that is applicable to the analysis
1 _{year}	0.48	20.50	0.42	
2 _{year}	0.51	26.57	0.58	
5 _{year}	0.57	34.62	0.85	
10 _{year}	0.60	39.44	1.02	
20 _{year}	0.63	45.76	1.24	
50 _{year}	0.69	54.18	1.60	
100 _{year}	0.72	60.69	1.87	

ARI vs Discharge





Project: Adani Carmichael
Project No.: AA006158
Designer: SM
Date: 2/07/2013

Rational Method Calculations

Project

Description

Time of Concentration minutes

Area of Catchment Hectares

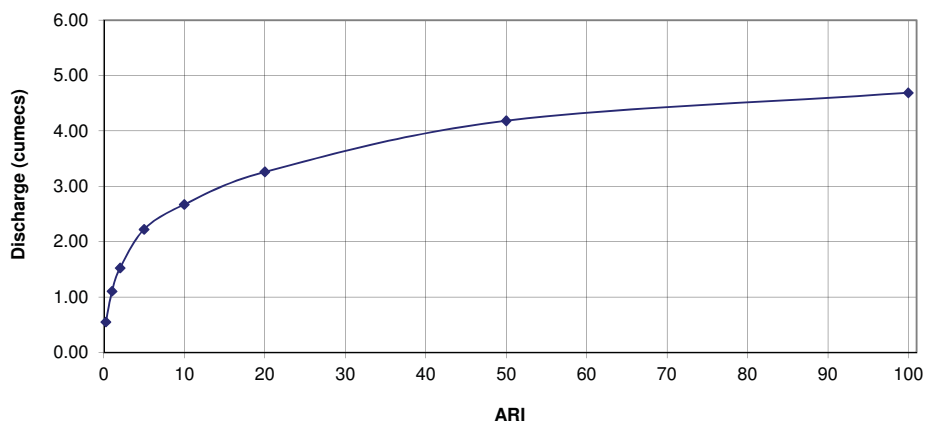
Fraction Impervious

Council Chart No.

Council Name

ARI	C value	Rainfall Intensity (mm/hr)	Discharge (m ³ /s)	Comments
3 _{month}			0.55	Write anything here that is applicable to the analysis
1 _{year}	0.70	36.67	1.11	
2 _{year}	0.75	47.57	1.53	
5 _{year}	0.84	62.09	2.23	
10 _{year}	0.88	70.85	2.67	
20 _{year}	0.92	82.27	3.26	
50 _{year}	1.00	97.57	4.19	
100 _{year}	1.00	109.36	4.69	

ARI vs Discharge





CATCHMENT 1
PRELIMINARY SIZING OF DETENTION BASIN

PRELIMINARY SIZING

Time of Concentration=	43
Q2	2765
Q5	4012
Q10	4795
Q20	5875
Q50	7527
Q100	8129

Project: Adani Carmichael Mine
Project No.: AA006158
Designer: SM
Date: 4/07/2013

Q2 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	1.53
		Qo=desired peak outflow rate "Pre-dev"=	0.58
		tc=time of peak "Post-dev" (min)=	43
r=(Qi-Qo)/Qi		r =	0.62091503
Vi = 4tcQi/3		Vi =	5263.2
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.4639953	$V_s=$	2442 m ³
Boyd 1989			
$V_s/V_i = r =$	0.620915	$V_s=$	3268 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.4738028	$V_s=$	2494 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.5424552	$V_s=$	2855 m ³
Average Vs =			2765 m³

Q5 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	2.23
		Qo=desired peak outflow rate "Pre-dev"=	0.85
		tc=time of peak "Post-dev" (min)=	43
r=(Qi-Qo)/Qi		r =	0.61883408
Vi = 4tcQi/3		Vi =	7671.2
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.4615818	$V_s=$	3541 m ³
Boyd 1989			
$V_s/V_i = r =$	0.6188341	$V_s=$	4747 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.47141	$V_s=$	3616 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.5402079	$V_s=$	4144 m ³
Average Vs =			4012 m³

Q10 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	2.67
		Qo=desired peak outflow rate "Pre-dev"=	1.02
		tc=time of peak "Post-dev" (min)=	43
r=(Qi-Qo)/Qi		r =	0.61797753
Vi = 4tcQi/3		Vi =	9184.8
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.46059	$V_s=$	4230 m ³
Boyd 1989			
$V_s/V_i = r =$	0.617978	$V_s=$	5676 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.470427	$V_s=$	4321 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.539284	$V_s=$	4953 m ³
		Average Vs =	4795 m³

Q20 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	3.26
		Qo=desired peak outflow rate "Pre-dev"=	1.24
		tc=time of peak "Post-dev" (min)=	43
r=(Qi-Qo)/Qi		r =	0.6196319
Vi = 4tcQi/3		Vi =	11214.4
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.462506	$V_s=$	5187 m ³
Boyd 1989			
$V_s/V_i = r =$	0.619632	$V_s=$	6949 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.472327	$V_s=$	5297 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.541069	$V_s=$	6068 m ³
		Average Vs =	5875 m³

Q50 Estimation of Detention Basin Size

Qi=peak inflow rate "Post-dev" =		4.19
Qo=desired peak outflow rate "Pre-dev"=		1.6
tc=time of peak "Post-dev" (min)=		43
r=(Qi-Qo)/Qi		r = 0.618138425
Vi = 4tcQi/3		Vi = 14413.6
Culp 1948		
Vs/Vi = r(1+2r)/3 =	0.460776	Vs= 6641 m^3
Boyd 1989		
Vs/Vi = r =	0.618138	Vs= 8910 m^3
Carroll 1990		
Vs/Vi = r(3+5r)/8 =	0.470611	Vs= 6783 m^3
Basha 1994		
Vs/Vi = r(2+r)/3 =	0.539457	Vs= 7776 m^3
Average Vs =		7527 m^3

Q100 Estimation of Detention Basin Size

Qi=peak inflow rate "Post-dev" =		4.69
Qo=desired peak outflow rate "Pre-dev"=		1.87
tc=time of peak "Post-dev" (min)=		43
r=(Qi-Qo)/Qi		r = 0.601279318
Vi = 4tcQi/3		Vi = 16133.6
Culp 1948		
Vs/Vi = r(1+2r)/3 =	0.441451	Vs= 7122 m^3
Boyd 1989		
Vs/Vi = r =	0.601279	Vs= 9701 m^3
Carroll 1990		
Vs/Vi = r(3+5r)/8 =	0.45144	Vs= 7283 m^3
Basha 1994		
Vs/Vi = r(2+r)/3 =	0.521365	Vs= 8411 m^3
Average Vs =		8129 m^3



Project: Adani Carmichael
Project No.: AA006158
Designer: SM
Date: 3/07/2013

Rational Method Calculations

Project

Description

Time of Concentration minutes

Area of Catchment Hectares

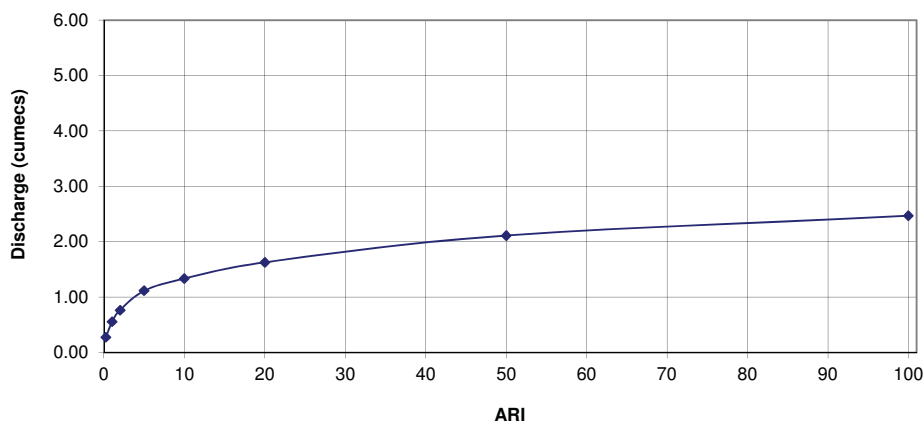
Fraction Impervious

Council Chart No.

Council Name

ARI	C value	Rainfall Intensity (mm/hr)	Discharge (m ³ /s)	Comments
3 _{month}			0.28	Write anything here that is applicable to the analysis
1 _{year}	0.48	18.29	0.56	
2 _{year}	0.51	23.70	0.77	
5 _{year}	0.57	30.87	1.12	
10 _{year}	0.60	35.16	1.34	
20 _{year}	0.63	40.80	1.63	
50 _{year}	0.69	48.30	2.11	
100 _{year}	0.72	54.09	2.47	

ARI vs Discharge





Project: Adani Carmichael
Project No.: AA006158
Designer: SM
Date: 2/07/2013

Rational Method Calculations

Project

Description

Time of Concentration minutes

Area of Catchment Hectares

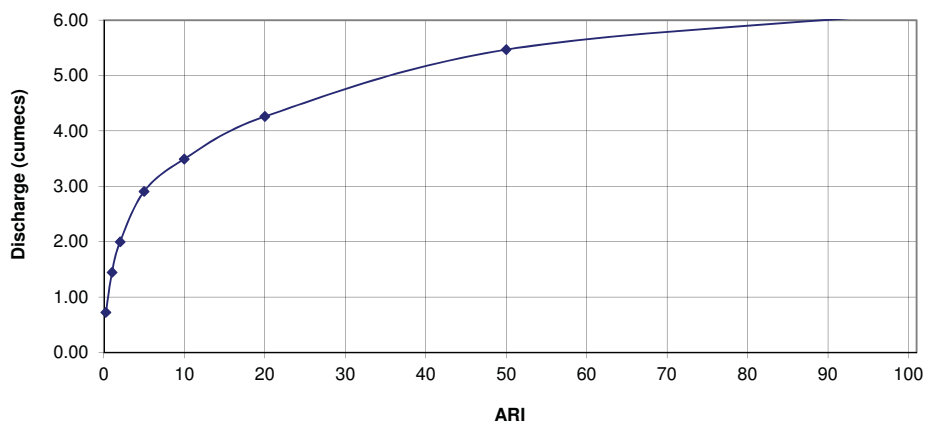
Fraction Impervious

Council Chart No.

Council Name

ARI	C value	Rainfall Intensity (mm/hr)	Discharge (m ³ /s)	Comments
3 _{month}			0.72	Write anything here that is applicable to the analysis
1 _{year}	0.70	32.46	1.45	
2 _{year}	0.75	42.10	2.00	
5 _{year}	0.84	54.91	2.91	
10 _{year}	0.88	62.63	3.50	
20 _{year}	0.92	72.70	4.26	
50 _{year}	1.00	86.19	5.47	
100 _{year}	1.00	96.58	6.13	

ARI vs Discharge





CATCHMENT 2
PRELIMINARY SIZING OF DETENTION BASIN

PRELIMINARY SIZING

Time of Concentration=	53
Q2	4400
Q5	5195
Q10	7734
Q20	9418
Q50	12014
Q100	12978

Project: Adani Carhmichael Mine
Project No.: AA006158
Designer: SM
Date: 4/07/2013

Q2 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	2
		Qo=desired peak outflow rate "Pre-dev"=	0.77
		tc=time of peak "Post-dev" (min)=	53
$r=(Q_i-Q_o)/Q_i$		r =	0.615
$V_i = 4tcQ_i/3$		$V_i =$	8480
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.45715	$V_s=$	3877 m ³
Boyd 1989			
$V_s/V_i = r =$	0.615	$V_s=$	5215 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.467016	$V_s=$	3960 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.536075	$V_s=$	4546 m ³
Average Vs =			4400 m³

Q5 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	2.91
		Qo=desired peak outflow rate "Pre-dev"=	1.12
		tc=time of peak "Post-dev" (min)=	43
$r=(Q_i-Q_o)/Q_i$		r =	0.61512027
$V_i = 4tcQ_i/3$		$V_i =$	10010.4
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.457289	$V_s=$	4578 m ³
Boyd 1989			
$V_s/V_i = r =$	0.61512	$V_s=$	6158 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.467153	$V_s=$	4676 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.536205	$V_s=$	5368 m ³
Average Vs =			5195 m³

Q10 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	3.5
		Qo=desired peak outflow rate "Pre-dev"=	1.34
		tc=time of peak "Post-dev" (min)=	53
$r=(Q_i-Q_o)/Q_i$		r =	0.61714286
$V_i = 4tcQ_i/3$		Vi =	14840
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.459624	Vs=	6821 m ³
Boyd 1989			
$V_s/V_i = r =$	0.617143	Vs=	9158 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.469469	Vs=	6967 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.538384	Vs=	7990 m ³
Average Vs =			7734 m³

Q20 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	4.26
		Qo=desired peak outflow rate "Pre-dev"=	1.63
		tc=time of peak "Post-dev" (min)=	53
$r=(Q_i-Q_o)/Q_i$		r =	0.61737089
$V_i = 4tcQ_i/3$		Vi =	18062.4
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.459888	Vs=	8307 m ³
Boyd 1989			
$V_s/V_i = r =$	0.617371	Vs=	11151 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.469731	Vs=	8484 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.53863	Vs=	9729 m ³
Average Vs =			9418 m³

Q50 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	5.47
		Qo=desired peak outflow rate "Pre-dev"=	2.11
		tc=time of peak "Post-dev" (min)=	53
$r=(Q_i-Q_o)/Q_i$		r =	0.614259598
$V_i = 4tcQ_i/3$		Vi =	23192.8
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.456296	Vs=	10583 m ³
Boyd 1989			
$V_s/V_i = r =$	0.61426	Vs=	14246 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.466169	Vs=	10812 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.535278	Vs=	12415 m ³
Average Vs =			12014 m³

Q100 Estimation of Detention Basin Size

		Qi=peak inflow rate "Post-dev" =	6.13
		Qo=desired peak outflow rate "Pre-dev"=	2.47
		tc=time of peak "Post-dev" (min)=	53
$r=(Q_i-Q_o)/Q_i$		r =	0.597063622
$V_i = 4tcQ_i/3$		Vi =	25991.2
Culp 1948			
$V_s/V_i = r(1+2r)/3 =$	0.436678	Vs=	11350 m ³
Boyd 1989			
$V_s/V_i = r =$	0.597064	Vs=	15518 m ³
Carroll 1990			
$V_s/V_i = r(3+5r)/8 =$	0.446702	Vs=	11610 m ³
Basha 1994			
$V_s/V_i = r(2+r)/3 =$	0.516871	Vs=	13434 m ³
Average Vs =			12978 m³

Job: Adani Carmichael
Job No: AA006158
Designer: SM
Date: 3/07/2013

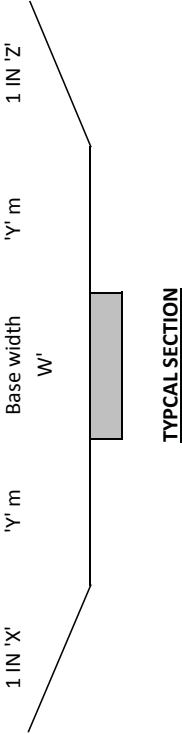
Open Channel Design (Flood level check)

Location: Airport Channel Design

100 5.29 m³/s

Max. Channel Width = 11.000 m
Max. Channel Depth = 1.150 m
Base Width 'W' = 3.000 m
Side Slopes 1 IN X = 4.0
Side Slopes 1 IN Z = 4.0
Distance 'Y' = 0.000 m
nbase = 0.032
nsides = 0.032

Trial Depth = 0.850 m
Trial Slope = 0.20 %



MANNINGS FORMULAR CALCS.

Base Area (wetted)	Base Perim. (wetted)	Slope Area (wetted)	Slope Perim. (wetted)	HR Base	HR Slope	Q base (m³/s)	Q slope (m³/s)	Q _{Total} (m³/s)	Vel. (m/s)	d.V < 0.6	Freeboard (m)
2.550	3.000	2.890	7.009	0.850	0.412	3.20	2.24	5.44	1.00	0.85	0.300

Appendix H: Statutory Forms

IDAS form 1—Application details

(Sustainable Planning Act 2009 version 3.0 effective 1 July 2013)

This form must be used for **ALL** development applications.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete this form (*IDAS form 1—Application details*)
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the Sustainable Planning Regulation 2009.

This form and any other IDAS form relevant to your application must be used for development applications 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*. Whenever a planning scheme is mentioned, take it to mean land use plan for the strategic port land, Brisbane core port land or airport land.

PLEASE NOTE: This form is not required to accompany requests for compliance assessment.

This form can also be completed online using MyDAS at www.dsdip.qld.gov.au/MyDAS

Mandatory requirements

Applicant details (Note: the applicant is the person responsible for making the application and need not be the owner of the land. The applicant is responsible for ensuring the information provided on all IDAS application forms is correct. Any development permit or preliminary approval that may be issued as a consequence of this application will be issued to the applicant.)

Name/s (individual or company name in full)	Adani Mining Pty Ltd			
For companies, contact name	Melinda Bergmann - Manager, Approvals			
Postal address	GPO Box 2569			
	Suburb	Brisbane		
	State	Queensland	Postcode	4001
	Country	Australia		
Contact phone number	07 3037 5510			
Mobile number (non-mandatory requirement)	-			
Fax number (non-mandatory requirement)	-			

Email address (non-mandatory requirement)

melinda.bergmann

@adani.com

Applicant's reference number (non-mandatory requirement)

-

1. What is the nature of the development proposed and what type of approval is being sought?

Table A—Aspect 1 of the application (If there are additional aspects to the application please list in Table B—Aspect 2.)

a) What is the nature of the development? (Please only tick one box.)

☒ Material change of use ☐ Reconfiguring a lot ☐ Building work ☐ Operational work

b) What is the approval type? (Please only tick one box.)

☐ Preliminary approval under s241 of SPA ☐ Preliminary approval under s241 and s242 of SPA ☒ Development permit

c) Provide a brief description of the proposal, including use definition and number of buildings or structures where applicable (e.g. six unit apartment building defined as a *multi-unit dwelling*, 30 lot residential subdivision etc.)

MCU (Airport), MCU (ERA #63 - Sewage Treatment)

d) What is the level of assessment? (Please only tick one box.)

☒ Impact assessment ☐ Code assessment

Table B—Aspect 2 of the application (If there are additional aspects to the application please list in Table C—Additional aspects of the application.)

a) What is the nature of development? (Please only tick one box.)

☐ Material change of use ☐ Reconfiguring a lot ☐ Building work ☒ Operational work

b) What is the approval type? (Please only tick one box.)

☐ Preliminary approval under s241 of SPA ☐ Preliminary approval under s241 and s242 of SPA ☒ Development permit

c) Provide a brief description of the proposal, including use definition and number of buildings or structures where applicable (e.g. six unit apartment building defined as a *multi-unit dwelling*, 30 lot residential subdivision etc.)

Bulk Earthworks & Vegetation Clearing associated with proposed Airport

d) What is the level of assessment?

☐ Impact assessment ☒ Code assessment

Table C—Additional aspects of the application (If there are additional aspects to the application please list in a separate table on an extra page and attach to this form.)

☐ Refer attached schedule ☒ Not required

2. Location of the premises (Complete Table D and/or Table E as applicable. Identify each lot in a separate row.)

Table D—Street address and lot on plan for the premises or street address and lot on plan for the land adjoining or adjacent to the premises (Note: this table is to be used for applications involving taking or interfering with water). (Attach a separate schedule if there is insufficient space in this table.)

- ☒ Street address **and** lot on plan (All lots must be listed.)
- ☐ Street address **and** lot on plan for the land adjoining or adjacent to the premises (Appropriate for development in water but adjoining or adjacent to land, e.g. jetty, pontoon. All lots must be listed.)

Street address					Lot on plan description		Local government area (e.g. Logan, Cairns)
Lot	Unit no.	Street no.	Street name and official suburb/ locality name	Post-code	Lot no.	Plan type and plan no.	
i)		5509	Elgin Road, Clermont	4721	Part 662	PH1491	Isaac
ii)							
iii)							

Planning scheme details (If the premises involves multiple zones, clearly identify the relevant zone/s for each lot in a separate row in the below table. Non-mandatory)

Lot	Applicable zone / precinct	Applicable local plan / precinct	Applicable overlay/s
i)	Rural	--	Land Char. - Features / GQAL
ii)			
iii)			

Table E—Premises coordinates (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.) (Attach a separate schedule if there is insufficient space in this table.)

Coordinates (Note: place each set of coordinates in a separate row)				Zone reference	Datum	Local government area (if applicable)
Easting	Northing	Latitude	Longitude			
		-21.993659	146.46998		☒ GDA94 ☐ WGS84 ☐ other	

3. Total area of the premises on which the development is proposed (indicate square metres)

154.8 hectares

4. Current use/s of the premises (e.g. vacant land, house, apartment building, cane farm etc.)

Vacant pastoral land

5. Are there any current approvals (e.g. a preliminary approval) associated with this application? (Non-mandatory requirement)

☒ No ☐ Yes—provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)
-	-	-

6. Is owner's consent required for this application? (Refer to notes at the end of this form for more information.)

☐ No
☒ Yes—complete either Table F, Table G or Table H as applicable

Table F

Name of owner/s of the land	
I/We, the above-mentioned owner/s of the land, consent to the making of this application.	
Signature of owner/s of the land	
Date	

Table G

Name of owner/s of the land	The State of Queensland (consent to be provided post EIS approval)
☒ The owner's written consent is attached or will be provided separately to the assessment manager.	

Table H

Name of owner/s of the land	
☐ By making this application, I, the applicant, declare that the owner has given written consent to the making of the application.	

7. Identify if any of the following apply to the premises (Tick applicable box/es.)

- ☒ Adjacent to a water body, watercourse or aquifer (e.g. creek, river, lake, canal)—complete Table I
☐ On strategic port land under the *Transport Infrastructure Act 1994*—complete Table J
☐ In a tidal water area—complete Table K
☐ On Brisbane core port land under the *Transport Infrastructure Act 1994* (No table requires completion.)
☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008* (no table requires completion)

Table I

Name of water body, watercourse or aquifer
Belyando River, Carmichael River, Dyllingo Creek, Mistake Creek

Table J

Lot on plan description for strategic port land	Port authority for the lot

Table K	
Name of local government for the tidal area (if applicable)	Port authority for the tidal area (if applicable)

8. Are there any existing easements on the premises? (e.g. for vehicular access, electricity, overland flow, water etc)

☒ No ☐ Yes—ensure the type, location and dimension of each easement is included in the plans submitted

9. Does the proposal include new building work or operational work on the premises? (Including any services)

☐ No ☒ Yes—ensure the nature, location and dimension of proposed works are included in plans submitted

10. Is the payment of a portable long service leave levy applicable to this application? (Refer to notes at the end of this form for more information.)

☐ No—go to question 12 ☒ Yes

11. Has the portable long service leave levy been paid? (Refer to notes at the end of this form for more information.)

☒ No

☐ Yes—complete Table L and submit with this application the yellow local government/private certifier's copy of the receipted QLeave form

Table L		
Amount paid	Date paid (dd/mm/yy)	QLeave project number (6 digit number starting with A, B, E, L or P)

12. Has the local government agreed to apply a superseded planning scheme to this application under section 96 of the *Sustainable Planning Act 2009*?

☒ No

☐ Yes—please provide details below

Name of local government	Date of written notice given by local government (dd/mm/yy)	Reference number of written notice given by local government (if applicable)
-	-	-

13. List below all of the forms and supporting information that accompany this application (Include all IDAS forms, checklists, mandatory supporting information etc. that will be submitted as part of this application. Note: this question does not apply for applications made online using MyDAS)

Description of attachment or title of attachment	Method of lodgement to assessment manager
IDAS Forms 5,6,8,11	Electronic
Planning - Gassman Development Perspectives' 'Planning Assessment Report'	Electronic
Ecology - Vegetation Management Plan	Electronic
Engineering - Bulk Earthworks Design, Stormwater Managenet Plan, Service Strategy	Electronic
Environmental Management - Site Based Management Plans for proposed ERA	Electronic

14. Applicant's declaration

☒ By making this application, I declare that all information in this application is true and correct (Note: it is unlawful to provide false or misleading information)

Notes for completing this form

- Section 261 of the *Sustainable Planning Act 2009* prescribes when an application is a properly-made application. Note, the assessment manager has discretion to accept an application as properly made despite any non-compliance with the requirement to provide mandatory supporting information under section 260(1)(c) of the *Sustainable Planning Act 2009*

Applicant details

- Where the applicant is not a natural person, ensure the applicant entity is a real legal entity.

Question 1

- Schedule 3 of the Sustainable Planning Regulation 2009 identifies assessable development and the type of assessment. Where schedule 3 identifies assessable development as "various aspects of development" the applicant must identify each aspect of the development on Tables A, B and C respectively and as required.

Question 6

- Section 263 of the *Sustainable Planning Act 2009* sets out when the consent of the owner of the land is required for an application. Section 260(1)(e) of the *Sustainable Planning Act 2009* provides that if the owner's consent is required under section 263, then an application must contain, or be accompanied by, the written consent of the owner, or include a declaration by the applicant that the owner has given written consent to the making of the application. If a development application relates to a state resource, the application is not required to be supported by evidence of an allocation or entitlement to a state resource. However, where the state is the owner of the subject land, the written consent of the state, as landowner, may be required. Allocation or entitlement to the state resource is a separate process and will need to be obtained before development commences.

Question 11

- The *Building and Construction Industry (Portable Long Service Leave) Act 1991* prescribes when the portable long service leave levy is payable.
- The portable long service leave levy amount and other prescribed percentages and rates for calculating the levy are prescribed in the Building and Construction Industry (Portable Long Service Leave) Regulation 2002.

Question 12

- The portable long service leave levy need not be paid when the application is made, but the *Building and Construction Industry (Portable Long Service Leave) Act 1991* requires the levy to be paid before a development permit is issued.
- Building and construction industry notification and payment forms are available from any Queensland post office or agency, on request from QLeave, or can be completed on the QLeave website at www.qleave.qld.gov.au. For further information contact QLeave on 1800 803 481 or visit www.qleave.qld.gov.au.

Privacy—The information collected in this form will be used by the Department of State Development, Infrastructure and Planning (DSDIP), assessment manager, referral agency and/or building certifier in accordance with the processing and assessment of your application. Your personal details should not be disclosed for a purpose outside of the IDAS process or the provisions about public access to planning and development information in the *Sustainable Planning Act 2009*, except where required by legislation (including the *Right to Information Act 2009*) or as required by Parliament. This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002*.

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Reference numbers

NOTIFICATION OF ENGAGEMENT OF A PRIVATE CERTIFIER

To

Council. I have been engaged as the private certifier for the building work referred to in this application

Date of engagement	Name	BSA Certification license number	Building classification/s

QLEAVE NOTIFICATION AND PAYMENT (For completion by assessment manager or private certifier if applicable.)

Description of the work	QLeave project number	Amount paid (\$)	Date paid	Date receipted form sighted by assessment manager	Name of officer who sighted the form

The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

IDAS form 5—Material change of use assessable against a planning scheme

(Sustainable Planning Act 2009 version 3.0 effective 1 July 2013)

This form must be used for development applications for a material change of use assessable against a planning scheme.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete *IDAS form 1—Application details*
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the Sustainable Planning Act 2009 (SPA) or the Sustainable Planning Regulation 2009.

This form must also be used for material change of use on 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* that requires assessment against the land use plan for that land. Whenever a planning scheme is mentioned, take it to mean land use plan for the strategic port land, Brisbane core port land or airport land.

This form can also be completed online using MyDAS at www.dsdip.qld.gov.au/MyDAS

Mandatory requirements

- 1. Describe the proposed use.** (Note: this is to provide additional detail to the information provided in question 1 of *IDAS form 1—Application details*. Attach a separate schedule if there is insufficient space in this table.)

General explanation of the proposed use	Planning scheme definition (include each definition in a new row) (non-mandatory)	No. of dwelling units (if applicable) or gross floor area (if applicable)	Days and hours of operation (if applicable)	No. of employees (if applicable)
Proposed private airport	Airport	see report	see report	see report

- 2. Are there any current approvals associated with the proposed material change of use?** (e.g. a preliminary approval.)

☐ No ☒ Yes—provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)
-	-	-

3. Does the proposed use involve the following? (Tick all applicable boxes.)

The reuse of existing buildings on the premises	☐	No	☐	Yes
New building work on the premises	☐	No	☒	Yes
The reuse of existing operational work on the premises	☒	No	☐	Yes
New operational work on the premises	☐	No	☒	Yes

Mandatory supporting information

4. Confirm that the following mandatory supporting information accompanies this application

Mandatory supporting information	Confirmation of lodgement	Method of lodgement
All applications		
A site plan drawn to an appropriate scale (1:100, 1:200 or 1:500 are recommended scales) which shows the following: - the location and site area of the land to which the application relates (<i>relevant land</i>) - the north point - the boundaries of the relevant land - any road frontages of the relevant land, including the name of the road - the location and use of any existing or proposed buildings or structures on the relevant land (note: where extensive demolition or new buildings are proposed, two separate plans [an existing site plan and proposed site plan] may be appropriate) - any existing or proposed easements on the relevant land and their function - the location and use of buildings on land adjoining the relevant land - all vehicle access points and any existing or proposed car parking areas on the relevant land. Car parking spaces for persons with disabilities and any service vehicle access and parking should be clearly marked - for any new building on the relevant land, the location of refuse storage - the location of any proposed retaining walls on the relevant land and their height - the location of any proposed landscaping on the relevant land - the location of any stormwater detention on the relevant land.	☒ Confirmed	Electronic
A statement about how the proposed development addresses the local government's planning scheme and any other planning instruments or documents relevant to the application.	☒ Confirmed	Electronic
A statement about the intensity and scale of the proposed use (e.g. number of visitors, number of seats, capacity of storage area etc.).	☒ Confirmed	Electronic
Information that states: - the existing or proposed floor area, site cover, maximum number of storeys and maximum height above natural ground level for existing or new buildings (e.g. information regarding existing buildings but not being reused) - the existing or proposed number of on-site car parking bays, type of vehicle cross-over (for non-residential uses) and vehicular servicing arrangement (for non-residential uses).	☒ Confirmed ☐ Not applicable	Electronic

A statement addressing the relevant part(s) of the State Development Assessment Provisions (SDAP).	☒ Confirmed ☐ Not applicable	Electronic
When the application involves the reuse of existing buildings		
Plans showing the size, location, existing floor area, existing site cover, existing maximum number of storeys and existing maximum height above natural ground level of the buildings to be reused.	☐ Confirmed ☒ Not applicable	
When the application involves new building work (including extensions)		
Floor plans drawn to an appropriate scale (1:50, 1:100 or 1:200 are recommended scales) which show the following: - the north point - the intended use of each area on the floor plan (for commercial, industrial or mixed use developments only) - the room layout (for residential development only) with all rooms clearly labelled - the existing and the proposed built form (for extensions only) - the gross floor area of each proposed floor area.	☒ Confirmed	Electronic
Elevations drawn to an appropriate scale (1:100, 1:200 or 1:500 are recommended scales) which show plans of all building elevations and facades, clearly labelled to identify orientation (e.g. north elevation)	☒ Confirmed	Electronic
Plans showing the size, location, proposed site cover, proposed maximum number of storeys, and proposed maximum height above natural ground level of the proposed new building work.	☒ Confirmed ☐ Not applicable	Electronic
When the application involves reuse of other existing work		
Plans showing the nature, location, number of on-site car parking bays, existing area of landscaping, existing type of vehicular cross-over (non-residential uses), and existing type of vehicular servicing arrangement (non-residential uses) of the work to be reused.	☐ Confirmed ☒ Not applicable	
When the application involves new operational work		
Plans showing the nature, location, number of new on-site car parking bays, proposed area of new landscaping, proposed type of new vehicle cross-over (non-residential uses), proposed maximum new vehicular servicing arrangement (non-residential uses) of the proposed new operational work.	☒ Confirmed ☐ Not applicable	Electronic

Privacy—Please refer to your assessment manager, referral agency and/or building certifier for further details on the use of information recorded in this form.

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The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

Department of State Development, Infrastructure and Planning

PO Box 15009 City East Qld 4002

tel 13 QGOV (13 74 68)

info@dsdip.qld.gov.au

www.dsdip.qld.gov.au

IDAS form 5—Material change of use assessable
against a planning scheme
Version 3.0—1 July 2013

IDAS form 6—Building or operational work assessable against a planning scheme

(Sustainable Planning Act 2009 version 3.0 effective 1 July 2013)

This form must be used for development applications for building work or operational work assessable against a planning scheme.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete *IDAS form 1—Application details*
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the Sustainable Planning Regulation 2009.

This form must be used for building work or operational work relating on 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* that requires assessment against the land use plan for that land. Whenever a planning scheme is mentioned, take it to mean land use plan for the strategic port land, Brisbane core port land or airport land.

This form can also be completed online using MyDAS at www.dsdipl.gld.gov.au/MyDAS

Mandatory requirements

1. **What is the nature of the work that requires assessment against a planning scheme?** (Tick all applicable boxes.)

- ☐ Building work—complete Table A ☒ Operational work—complete Table B

Table A

a) What is the nature of the building work (e.g. building, repairing, altering, underpinning, moving or demolishing a building)?

Melinda Bergmann - Manager, Approvals

b) Are there any current approvals associated with this application? (e.g. material change of use.)

- ☐ No ☐ Yes— provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)
-	-	-

Table B

a) What is the nature of the operational work? (Tick all applicable boxes.)

- ☐ Road works
 ☐ Stormwater
 ☐ Water infrastructure
☐ Drainage works
 ☒ Earthworks
 ☐ Sewerage infrastructure
☐ Landscaping
 ☐ Signage
 ☐ Clearing vegetation under the planning scheme
☐ Other—provide details

b) Is the operational work necessary to facilitate the creation of new lots? (E.g. subdivision.)

- ☒ No
 ☐ Yes—specify the number of lots being created

c) Are there any current approvals associated with this application? (E.g. material change of use.)

- ☐ No
 ☐ Yes—provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)

2. What is the dollar value of the proposed building work?
(Inc GST, materials and labour.)

\$

3. What is the dollar value of the proposed operational work?
(Inc GST, materials and labour.)

\$ approx. \$7M

Mandatory supporting information

4. Confirm that the following mandatory supporting information accompanies this application

Mandatory supporting information	Confirmation of lodgement	Method of lodgement
All applications involving building work or operational work		
A site plan drawn to an appropriate scale (1:100, 1:200 or 1:500 are recommended scales) which shows the following: - the location and site area of the land to which the application relates (<i>relevant land</i>) - the north point - the boundaries of the relevant land - the allotment layout showing existing lots, any proposed lots (including the dimensions of those lots), existing or proposed road reserves, building envelopes and existing or proposed open space (note: numbering is required for all lots) - any existing or proposed easements on the relevant land and their function - any access limitation strips - all existing and proposed roads and access points on the relevant land.	☒ Confirmed	Electronic

A statement about how the proposed development addresses the local government's planning schemes and any other planning documents relevant to the application.	☒ Confirmed	Electronic
A statement addressing the relevant part(s) of the State Development Assessment Provisions (SDAP).	☒ Confirmed ☐ Not applicable	Electronic
Applications for building work (including extensions and demolition that is assessable development)		
Floor plans drawn to an appropriate scale (1:50, 1:100 or 1:200 are recommended scales) which show the following: - the north point - the intended use of each area on the floor plan (for commercial, industrial or mixed use developments only) - the room layout (for residential development only) with all rooms clearly labelled - the existing and the proposed built form (for extensions only) - the gross floor area of each proposed floor area.	☐ Confirmed ☐ Not applicable	Electronic
Elevations drawn to an appropriate scale (1:100, 1:200 or 1:500 are recommended scales) which show plans of all building elevations and facades, clearly labelled to identify orientation (e.g. north elevation).	☒ Confirmed ☒ Not applicable	
Plans showing the size, location, proposed site cover, proposed maximum number of storeys, and proposed maximum height above natural ground level of the proposed new building work.	☒ Confirmed ☐ Not applicable	Electronic
Plans showing the extent of any demolition that is assessable development.	☐ Confirmed ☒ Not applicable	
Applications for operational work involving earthworks (filling and excavating)		
Drawings showing: - existing and proposed contours - areas to be cut and filled - the location and level of any permanent survey marks or reference stations used as datum for the works - the location of any proposed retaining walls on the relevant land and their height - the defined flood level (if applicable) - the fill level (if applicable).	☒ Confirmed ☐ Not applicable	Electronic
Applications for operational work involving roadworks		
Drawings showing: - existing and proposed contours - the centreline or construction line showing chainages, bearings, offsets if the construction line is not the centreline of the road and all intersection points - information for each curve including tangent point chainages and offsets, curve radii, arc length, tangent length, superelevation (if applicable) and curve widening (if applicable) - kerb lines including kerb radii (where not parallel to centreline) and tangent point changes (where not parallel to centreline) - edge of pavement where kerb is not constructed - position and extent of channelisation - location and details of all traffic signs, guideposts, guardrail and other street furniture - pavement markings including details on raised pavement markers	☐ Confirmed ☒ Not applicable	

• catchpit, manhole and pipeline locations • drainage details (if applicable) • cross road drainage culverts (if applicable) • concrete footpaths and cycle paths • location and details for access points, ramps and invert crossings • changes in surfacing material.		MCU (Airport), MCU (ERA #63 - Sewage Treatment)
Applications for operational work involving stormwater drainage		
Drawings showing: • existing and proposed contours • drainage locations, diameters and class of pipe, open drains and easements • manhole location, chainage and offset or coordinates and inlet and outlet invert levels • inlet pit locations, chainage and offset or coordinates and invert and kerb levels.	☒ Confirmed ☒ Not applicable	
Applications for operational work involving water reticulation		
Drawings showing: • kerb lines or edge of pavement where kerb is not constructed • location and levels of other utility services where affected by water reticulation works • pipe diameter, type of pipe and pipe alignment • water main alignments • water supply pump station details (if applicable) • minor reservoir details (if applicable) • conduits • location of valves and fire hydrants • location of house connections (if applicable) • location of bench marks and reference pegs.	☐ Confirmed ☒ Not applicable	
Applications for operational work involving sewerage reticulation		
Drawings showing: • location of all existing and proposed services • location of all existing and proposed sewer lines and manhole locations • location of all house connection branches • kerb lines or edge of pavement where kerb is not constructed • chainages • design sewer invert levels • design top of manhole levels • type of manhole and manhole cover • pipe diameter, type of pipe and pipe alignment • location of house connections (if applicable) • sewer pump station details (if applicable).	☒ Confirmed ☒ Not applicable	
Applications for operational work involving street lighting		
Drawings showing: • location of all light poles and service conduits • location of all other cross road conduits • type of wattage and lighting • any traffic calming devices • additional plans for roundabouts and major roads (if applicable) • details of any variations to normal alignment	☐ Confirmed ☒ Not applicable	

• details of lighting levels.		
Applications for operational work involving public utility services		
Drawings showing: • any existing light poles and power poles • any existing underground services • details of proposed services • alteration to existing services.	☒ Confirmed ☒ Not applicable	
Applications for operational work involving landscaping works		
Drawings showing: • the location of proposed plant species • a plant schedule indicating common and botanical names, pot sizes and numbers of plants • planting bed preparation details including topsoil depth, subgrade preparation, mulch type and depth, type of turf, pebble, paving and garden edge • the location and type of any existing trees to be retained • construction details of planter boxes, retaining walls and fences • the proposed maintenance period • irrigation system details.	☐ Confirmed ☒ Not applicable	

Privacy—Please refer to your assessment manager, referral agency and/or building certifier for further details on the use of information recorded in this form.

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Reference numbers

The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

IDAS form 8—Environmentally relevant activity

(Sustainable Planning Act 2009 version 3.0 effective 1 July 2013)

This form must be used for development applications for an environmentally relevant activity.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete *IDAS form 1—Application details*
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in either the *Sustainable Planning Act 2009* (SPA), the Sustainable Planning Regulation 2009, the *Environmental Protection Act 1994* or the Environmental Protection Regulation 2008.

This form can also be completed online using MyDAS at www.dsdip.qld.gov.au/MyDAS

Mandatory requirements

1. **What is the nature of the proposed environmentally relevant activity (ERA)?** (complete a new Table A for each proposed ERA—including ERAs that are not concurrence ERAs)

Table A

ERA number and name	63 (1a [ii]) Sewage treatment: 21-100EP with treated effluent discharge
ERA threshold	21 - 100 EP
Applicable fees	\$ 2,980.80
Proposed scale/capacity	36 EP
Type of approval sought	☒ Development permit and environmental authority (see notes) ☐ Preliminary approval
Is the proposed ERA a concurrence ERA?	☐ No ☐ Yes

2. **Are there any existing ERAs on or associated with the premises?**

- ☒ No
☐ Yes—complete a new Table B for each existing ERA

Table B

ERA number and name	
ERA threshold	
Existing scale/capacity	
Is the ERA proposed to continue on site?	☐ No ☐ Yes

3. Does the proposed activity involve any of the following? (Tick all applicable boxes.)

- ☐ Release of water or waste to a wetland for treatment
- ☐ Release of waste directly to groundwater

Mandatory supporting information

4. Confirm that the following mandatory supporting information accompanies this application

About the subject land	Confirmation of lodgement	Method of lodgement
Description of the site, including site maps showing vegetation, topography and any areas of cultural or heritage significance.	☒ Confirmed	Electronic
Details of any known acid sulphate soils within or adjoining the premises.	☐ Confirmed ☐ Not applicable	
Details about how the choice of the site, at which the activity is to be carried out, minimises serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places.	☒ Confirmed	Electronic
Details about how the location for the activity on a site protects all environmental values relevant to adjacent sensitive uses.	☐ Confirmed	Electronic
Details about how the design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with best practice environmental management.	☒ Confirmed	Electronic
About the proposed ERA		
Attachment to IDAS form 8—application for an environmental authority (EM941) completed and required information provided.	☐ Confirmed	Electronic
A statement addressing the relevant part(s) of the State Development Assessment Provisions (SDAP).	☒ Confirmed ☐ Not applicable	Electronic

Notes for completing this form:

- An environmental authority is required to operate an ERA.
- A development approval is only required if at least one of the ERAs to be operated is a concurrence ERA.
- Schedule 2 of the *Environmental Protection Regulation 2008* states the aggregate environmental scores, the thresholds that apply to ERAs, and which ERAs are concurrence ERAs (denoted by a 'C' in schedule 2, column 3).
- This development application is taken to be an application for an environmental authority. This application is not properly made unless it includes the [Attachment to IDAS form 8—application for an environmental authority \(EM941\)](#).
- There are annual fees associated with the operation of an ERA. These fees are initially payable 20 business days after the environmental authority takes effect. After this initial payment, annual fees will be payable on the anniversary of the take effect day. Chapter 8 and Schedule 10 of the *Environmental Protection Regulation 2008* contain all information about the applicable fees and how they are calculated.

Privacy—Please refer to your assessment manager, referral agency and/or building certifier for further details on the use of information recorded in this form.

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Date received

Reference numbers

The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agencies.

IDAS form 11—Clearing native vegetation

(Sustainable Planning Act 2009 version 3.0 effective 1 July 2013)

This form must be used for development applications that involve the clearing of native vegetation.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete *IDAS form 1—Application details*
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application
- include the relevant application fee, noting that referral agency fees (where applicable) are to be paid to the referral agency

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the Sustainable Planning Regulation 2009.

This form can also be completed online using MyDAS at www.dsdip.qld.gov.au/MyDAS

Mandatory requirements

1. What type of development is proposed?

- ☒ Operational work for clearing vegetation made assessable under Schedule 3 of the Sustainable Planning Regulation 2009
- ☐ Material change of use of the premises
- ☐ Reconfiguring a lot

2. What type of approval is being sought?

- ☒ Development permit
- ☐ Preliminary approval
- ☐ Both—provide details below

Mandatory supporting information

3. Confirm that the following mandatory supporting information accompanies this application

For ALL applications	Confirmation of lodgement	Method of lodgement
A property vegetation management plan including as defined under the Vegetation Management Act 1999 schedule. Note: A property vegetation management plan must show the matters prescribed in s.11 of the Vegetation Management Regulation 2012.	☒ Confirmed	Electronic
A statement addressing the relevant part(s) of the State Development Assessment Provisions (SDAP).	☐ Confirmed ☐ Not applicable	

For ALL applications	Confirmation of lodgement	Method of lodgement
For an operational work application for which the assessment manager is the local government		
Written confirmation that the chief executive of the Department of Natural Resources and Mines is satisfied the proposed clearing is for a relevant purpose under the <i>Vegetation Management Act 1999</i> , section 22A.	☒ Confirmed ☐ Not applicable	Electronic
For an operational work application where the assessment manager is the Department of Natural Resources and Mines		
Either of the following: - written confirmation that the chief executive of the Department of Natural Resources and Mines is satisfied the proposed clearing is for a relevant purpose under the <i>Vegetation Management Act 1999</i>, section 22A; or - information identifying the relevant purpose under the <i>Vegetation Management Act 1999</i>, section 22A and demonstrating how the proposed clearing is for that purpose.	☐ Confirmed ☒ Not applicable	Electronic
For applications for a material change of use or reconfiguring a lot		
The following additional detail to be included in the property vegetation management plan: - details of the location and extent of: - infrastructure, including buildings, fences, roads and electrical, telecommunication or sewerage services; and - firebreaks and fire management lines; and - details of the way the proposed clearing complies with the applicable concurrence agency policy under the <i>Vegetation Management Act 1999</i>.	☒ Confirmed ☐ Not applicable	

Notes for completing this form

- The Department of Natural Resource and Mines (DNRM) website contains a comprehensive range of information about the *Vegetation Management Act 1999*, including assessment codes and policies, as well as the *Landholder's guide to vegetation clearing applications*.
- Question 3 for operational work applications —Under the *Vegetation Management Act 1999*, the proposed vegetation clearing is only for a relevant purpose if the applicant satisfies the chief executive of the Department of Natural Resources and Mines (DNRM) that the development applied for is one of the purposes listed in section 22A of that Act. If the assessment manager is the local government, the applicant must obtain confirmation from the chief executive of DNRM that the proposed clearing is for a relevant purpose and provide this with the application. However, if DNRM is the assessment manager, the applicant has the choice of either obtaining this confirmation before making the application, or providing adequate information for DNRM to make the decision on whether the proposed clearing is for a relevant purpose at the time the application is received.

Privacy—Please refer to your assessment manager, referral agency and/or building certifier for further details on the use of information recorded in this form.

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Reference numbers

The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

Schedule 3 Assessable Development

Checklist 1—Various aspects of development

(Sustainable Planning Act 2009 version 3.0 effective 1 July 2013)

This checklist applies to the carrying out of various aspects of development, as specified in the Sustainable Planning Regulation 2009, Schedule 3, Part 1, Table 5.

You may complete this checklist as part of your development application. The checklist will:

- help you identify whether you need to make a development application for the proposed development
- help you identify the relevant Integrated Development Assessment System (IDAS) form you need to complete as part of your application
- assist in identifying the assessment manager or referral agency for development that is assessable development under schedule 3 of the Sustainable Planning Regulation 2009.

If your development involves a material change of use, reconfiguring a lot, operational work or building work, it is recommended you complete the relevant checklists: *Checklist 2—Material change of use*, *Checklist 3—Reconfiguring a lot*, *Checklist 4—Operational work*, or *Checklist 5—Building work*.

If you are unsure how to answer any questions on this checklist, phone or visit your local government, or go to the Department of State Development, Infrastructure and Planning's (DSDIP) website at www.dsdiip.qld.gov.au.

All terms used in this checklist have the meaning given in the *Sustainable Planning Act 2009* or the Sustainable Planning Regulation 2009.

Part 1—General questions

1.1 Does the proposal involve removing quarry material from a watercourse or lake for which an allocation notice is required under the *Water Act 2000*, other than within a priority development area or on a premises to which structure plan arrangements apply?

- | | |
|---|-------------------------------------|
| ☒ No | • Continue to question 1.2 |
| ☒ Yes | • Complete part 2 of this checklist |

1.2 Is any part of the proposed development intended to be carried out on a Queensland heritage place under the *Queensland Heritage Act 1992*?

- | | |
|------------------------------|-------------------------------------|
| ☐ No | • Continue to question 1.3 |
| ☐ Yes | • Complete part 3 of this checklist |

1.3 Does the proposal involve development on a local heritage place?

- | | |
|--|-------------------------------------|
| ☒ No | • Continue to question 1.4 |
| ☐ Yes | • Complete part 4 of this checklist |

1.4 Is any part of the development on strategic port land or airport land (other than development for a material change of use that is inconsistent with the land use plan for the strategic port land or airport land mentioned in the Sustainable Planning Regulation 2009, Schedule 3, Part 1, Table 2, item 3 or 4)?

- | | |
|-----------------------------|--|
| ☐ No | • End of checklist – A development permit is not required for this aspect of development under Sustainable Planning Regulation 2009, Schedule 3, Part 1, Table 5 |
|-----------------------------|--|

☐ Yes	Complete part 5 of this checklist
------------------------------	---

Part 2—Removing quarry material

2.1 Is any part of the quarry material which is intended to be removed, located within a wild river area under the *Wild Rivers Act 2005*?

☒ No	- A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Sustainable Management of Water Resources State Code</i> in the State Development Assessment Provisions (SDAP). - Your application must include <i>IDAS form 18—Removal of quarry material from a watercourse or lake</i>.
☐ Yes	Continue to question 2.2

2.2 Will the development be carried out on land to which a property development plan under the *Wild Rivers Act 2005* applies?

☐ No	A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Sustainable Management of Water Resources State Code</i> in the SDAP. Your application must include <i>IDAS form 18—Removal of quarry material from a watercourse or lake</i>.
☐ Yes	Continue to question 2.3

2.3 Is the development consistent with the property development plan?

☐ Yes	A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Sustainable Management of Water Resources State Code</i> in the SDAP. Your application must include <i>IDAS form 18—Removal of quarry material from a watercourse or lake</i>.
☐ No	This aspect of development is prohibited development. A development application for this development cannot be made.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 5, item 1
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 12
- Sustainable Planning Act 2009*, schedule 1, item 2

Part 3—Queensland heritage place

3.1 Do any of the following apply to the proposal?

The proposed development is only ongoing maintenance or minor work permitted by a general exemption certificate issued under section 75 of the <i>Queensland Heritage Act 1992</i> .	☐ Yes	☐ No
An exemption certificate has been issued under the <i>Queensland Heritage Act 1992</i> .	☐ Yes	☐ No
The proposed development is liturgical development under section 78 of the <i>Queensland Heritage Act 1992</i> .	☐ Yes	☐ No
The work is being carried out by the state.	☐ Yes	☐ No
The work is being carried out in a priority development area.	☐ Yes	☐ No
The development is mentioned in schedule 4 of the Sustainable Planning Regulation 2009.	☐ Yes	☐ No

- If you answered **no** to all of the above, a development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the *Queensland Heritage Place State Code* in the SDAP.
- Your application must include *IDAS form 3—Queensland heritage place*.
- If you answered **yes** to any of the above, a development permit is not required. End of part 3 of this checklist.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 5, item 2
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 19

Part 4—Local heritage place

4.1 Do any of the following apply to the proposal?

The development is building works to be carried out by or on behalf of the state, a public sector entity or a local government	☐ Yes ☐ No
The development is for public housing	☐ Yes ☐ No
The development is to be carried out by the state on land designated for community infrastructure under the <i>Sustainable Planning Act 2009</i> .	☐ Yes ☐ No
The development is mentioned in schedule 4 of the Sustainable Planning Regulation 2009.	☐ Yes ☐ No
The local heritage place is on an airport lessee's airport land under the <i>Airport Assets (Restructuring and Disposal) Act 2008</i> .	☐ Yes ☐ No

- If you answered **no** to all of the above, a development permit is required and your application to the local government, as assessment manager, must include *IDAS form 4—Local heritage place*.
- If you answered **yes** to any of the above, a development permit is not required.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 5, item 3
- Sustainable Planning Regulation 2009, schedule 3, part 2, table 1, item 1
- *Airports Assets (Restructuring and Disposal) Act 2008*, section 54

Part 5—Strategic port land or airport land

5.1 Does the land use plan for the strategic port land or airport land state that the development is assessable development?

☐ No	• A development permit is not required for this aspect of development; end of this checklist.
☐ Yes	• A development permit is required and your application may include, where applicable: • for a material change of use—<i>IDAS form 5—Material change of use assessable against a planning scheme</i> • for building or operational work—<i>IDAS form 6—Building or operational work assessable against a planning scheme</i> • for reconfiguring a lot—<i>IDAS form 7—Reconfiguring a lot</i> • The assessment manager will either be the local government or the port authority or DSDIP.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, 1part , table 5, items 6 and 7

Privacy—Please refer to your assessment manager for further details on the use of information recorded in this checklist.

Disclaimer:

While the DSDIP believes that the information contained on this checklist and provided as part of this process will be of assistance to you, it is provided on the basis that you will not rely on the information. It is your responsibility to make your own enquiries regarding the interpretation and application of the applicable legislation to your circumstances.

To the full extent permitted by law, DSDIP expressly disclaims all liability (including but not limited to liability for negligence) for errors or omissions of any kind or for any loss (including direct and indirect losses), damage or other consequence which may arise from your reliance on this process and the information contained on this checklist.

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Date received

Reference numbers

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Schedule 3 Assessable Development

Checklist 2—Material change of use

(Sustainable Planning Act 2009 version 3.0 effective 1 July 2013)

This checklist only applies when the development application seeks approval for a material change of use of premises. Before completing this checklist, please complete *Checklist 1—Various aspects of development*.

You may complete this checklist as part of your development application. The checklist will:

- help you identify whether you need to make a development application for the proposed development
- help you identify the relevant Integrated Development Assessment System (IDAS) forms you need to complete as part of your application
- assist in identifying the assessment manager or referral agency for development that is assessable development under schedule 3 of the Sustainable Planning Regulation 2009.

If your development involves reconfiguring a lot, building work or operational work, it is recommended you complete the relevant checklists: *Checklist 3—Reconfiguring a lot*, *Checklist 4—Operational* or *Checklist 5—Building work*, where relevant.

If you are unsure how to answer any questions on this checklist, phone or visit your local government, or go to the Department of State Development, Infrastructure and Planning's (DSDIP) website at www.dsdip.qld.gov.au

All terms used in this checklist have the meaning given in the *Sustainable Planning Act 2009* or the Sustainable Planning Regulation 2009.

Part 1—General questions

1.1 Is the proposed material change of use of premises for a brothel?

- | | |
|---|-------------------------------------|
| ☒ No | • Continue to question 1.2 |
| ☒ Yes | • Complete part 2 of this checklist |

1.2 Is the proposed material change of use of premises on strategic port land?

- | | |
|------------------------------|-------------------------------------|
| ☐ No | • Continue to question 1.3 |
| ☐ Yes | • Complete part 3 of this checklist |

1.3 Is the proposed material change of use of premises on airport land?

- | | |
|--|-------------------------------------|
| ☒ No | • Continue to question 1.4 |
| ☐ Yes | • Complete part 4 of this checklist |

1.4 Is the proposed material change of use of premises for a major hazard facility or proposed major hazard facility?

- | | |
|-----------------------------|----------------------------|
| ☐ No | • Continue to question 1.5 |
|-----------------------------|----------------------------|

☐ Yes	- A development permit is required. - The chief executive of DSDIP will be assessment manager or concurrence agency for the development application. - You must complete <i>IDAS form 22—Major hazard facility</i>.
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Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 2, item 5
- Sustainable Planning Regulation 2009, schedule 6, table 3, item 4
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 8

1.5 Is the proposed material change of use of a potentially affected premises?

☒ No	Continue to question 1.6
☐ Yes	Complete part 5 of this checklist

1.6 Is the proposed development a potentially sensitive material change of use of premises?

☒ No	Continue to question 1.7
☐ Yes	Complete part 6 of this checklist

1.7 Is the proposed material change of use of premises for aquaculture?

☒ No	Continue to question 1.8
☐ Yes	Complete part 7 of this checklist

1.8 Is the proposed material change of use of premises in a wild river area and is the proposed use for agricultural activities or animal husbandry activities (as defined under the *Wild Rivers Act 2005*)?

☐ No	Continue to question 1.9
☐ Yes	Complete part 8 of this checklist

1.9 Is the proposed material change of use of premises for an environmentally relevant activity that, under the Environmental Protection Regulation 2008, section 16, is identified as a concurrence ERA (the relevant ERA)?

☒ No	End of part 1 of checklist
☐ Yes	Complete part 9 of this checklist

Part 2—Brothel

2.1 Do any of the following apply?

More than five rooms in the proposed brothel are proposed to be used for providing prostitution.	☐ Yes ☐ No
Any land, the subject of the development, is in, or within 200 metres of the closest point on any boundary of, a primarily residential area, or an area approved for residential development or intended to be residential in character (measured according to the shortest route a person may reasonably and lawfully take, by vehicle or on foot, between the land the subject of the development and the other land).	☐ Yes ☐ No

Any land, the subject of the development, is within 200 metres of the closest point on any boundary of land on which there is a residential building, place of worship, hospital, school, kindergarten or any other facility or place regularly frequented by children for recreational or cultural activities (measured according to the shortest route a person may reasonably and lawfully take, by vehicle or on foot, between the land the subject of the development and the other land).	☐ Yes ☐ No
Any land, the subject of the development, is within 100 metres of the closest point on any boundary of land on which there is a residential building, place of worship, hospital, school, kindergarten or any other facility or place regularly frequented by children for recreational or cultural activities, measured in a straight line.	☐ Yes ☐ No
The land, the subject of the development, is in a town with a population of less than 25 000, the local government for the local government area has required that all material changes of use for such development within the area be prohibited, and the Minister has agreed that the development should be prohibited.	☐ Yes ☐ No

- If **yes** to any of the above, this aspect of the development is prohibited development and a development application cannot be made.
- If **no** to all of the above, a development permit is required. You must complete *IDAS form 9—Brothel*, and submit your application to the local government if the development is completely in a single local government area.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 2, item 2
- Sustainable Planning Regulation 2009, schedule 6, table 1, item 1(a)(iv)
- *Sustainable Planning Act 2009*, schedule 1, item 5

Part 3—Strategic port land

3.1 Do any of the following apply?

The proposed material change of use of premises is inconsistent with the land use plan approved under the <i>Transport Infrastructure Act 1994</i> .	☐ Yes ☐ No
The proposed material change of use of premises is assessable development under the land use plan approved under the <i>Transport Infrastructure Act 1994</i> , but is not inconsistent with it.	☐ Yes ☒ No

- If **yes** to either of the above, a development permit is required. The port authority may be the assessment manager for the development application (see schedule 6 of the Sustainable Planning Regulation 2009).
- If the proposed material change of use of premises is inconsistent with the land use plan, you are also required to refer the application to the Minister under the *Transport Infrastructure Act 1994* as concurrence agency.
- You must complete *IDAS Form 10—Inconsistent development on strategic port land or Brisbane core port land*.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 2, item 3
- Sustainable Planning Regulation 2009, schedule 3, part 1, table 5, item 6
- Sustainable Planning Regulation 2009, schedule 6
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 6

Part 4—Airport land

4.1 Do any of the following apply?

The proposed material change of use of premises is inconsistent with the land use plan approved under the <i>Airport Assets (Restructuring and Disposal) Act 2008</i> .	☒ Yes ☐ No
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The proposed material change of use of premises is assessable development under the land use plan approved under the <i>Airport Assets (Restructuring and Disposal) Act 2008</i> for the airport land, but is not inconsistent with it.	☐ Yes ☐ No
---	--

- If **yes** to either of the above, a development permit is required for this aspect of development. The chief executive of DSDIP may be the assessment manager (see schedule 6 of the Sustainable Planning Regulation 2009).
- If the proposed material change of use of premises is inconsistent with the land use plan approved under the *Airport Assets (Restructuring and Disposal) Act 2008*, you are also required to refer the application to the chief executive of DSDIP as concurrence agency, if the chief executive of DSDIP is not the assessment manager.
- You must complete *IDAS Form 5—Material change of use assessable against a planning scheme*.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 2, item 4
- Sustainable Planning Regulation 2009, schedule 3, part 2, table 5, item 7
- Sustainable Planning Regulation 2009, schedule 6
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 7

Part 5—Potentially affected premises

5.1 Do any of the following apply?

A suitability statement has been given for the premises, a site management plan has been approved in relation to the proposed use and the material change of use only involves: • the fit-out of a building, or • minor site excavation (e.g. post holes for open-sided non-habitable structures).	☐ Yes ☐ No
The proposed use is industrial and only involves minor site excavation (e.g. post holes for open-sided non-habitable structures).	☐ Yes ☐ No

- If **no** to both of the above:
 - A development permit is required for this aspect of development
 - The development application will require assessment by the chief executive of DSDIP, as assessment manager or concurrence agency
 - You must complete *IDAS form 24—Contaminated land*
- If **yes** to either of the above, this aspect of development is not assessable development but it is recommended that you provide a copy of any suitability statement or approved site management plan to the assessment manager to support your claim for exemption if any other aspects of your proposed use are assessable development.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 2, item 6
- Sustainable Planning Regulation 2009, schedule 6
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 23

Part 6—Potentially sensitive material change of use

6.1 Do either of the following apply?

All or part of the premises is used for, or if there is no existing use, was last used for, an industrial activity (other than a mining activity or chapter 5A activity).	☐ Yes ☐ No
All or part of the premises is in an area for which an area management advice has been given for natural mineralisation or industrial activity (other than for a mining activity or a chapter 5A activity).	☐ Yes ☐ No

- If **yes** to either of the above:
 - A development permit is required
 - The development application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency
 - You must complete *IDAS form 24—Contaminated land*
- If **no** to all of the above, this aspect of development does not require a development permit.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 2, item 7
- Sustainable Planning Regulation 2009, schedule 6
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 23

Part 7—Aquaculture

7.1 Will the proposed material change of use of premises for aquaculture cause discharge of waste into Queensland waters (as defined in section 36 of the *Acts Interpretation Act 1954*)?

- | | |
|------------------------------|----------------------------|
| ☐ No | • Continue to question 7.2 |
| ☐ Yes | • Go to question 7.3 |

7.2 Do any of the following apply?

The aquaculture is: • of indigenous freshwater fish species mentioned in the Fisheries Regulation 2008, schedule 10C • in a catchment listed in that schedule for that species for aquarium display or human consumption only • carried out in ponds, or using above-ground tanks, that have a total water surface area of no more than five hectares.	☐ Yes ☐ No
The aquaculture is of indigenous freshwater fish for aquarium display or human consumption only, or non-indigenous freshwater fish for aquarium display only, and is carried out using only above-ground tanks that have: • a floor area, excluding water storage area, of no more than 50m² • a roof impervious to rainwater.	☐ Yes ☐ No
The aquaculture is of indigenous marine fish for aquarium display only and is carried out using only above-ground tanks that have a total floor area, excluding water storage areas, of no more than 50m ² .	☐ Yes ☐ No

- If **no** to all of the above, continue to question 7.3
- If **yes** to any of the above, a development permit is not required for this aspect of development, but the proposed material change of use will be self assessable development and must comply with applicable codes

7.3 Is any part of the proposed material change of use of premises for aquaculture intended to be located in a wild river area?

- | | |
|-----------------------------|--|
| ☐ No | <ul style="list-style-type: none"> • A development permit is required for this aspect of development and this aspect of development requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency • You must complete <i>IDAS form 25—Aquaculture</i> • End of part 7 of this checklist |
|-----------------------------|--|

☐ Yes	Continue to question 7.4
------------------------------	--

7.4 Is the proposed material change of use of premises for aquaculture in a wild river high preservation area or wild river special floodplain management area?

☐ No	Continue to question 7.5
☐ Yes	To the extent the development is in a wild river high preservation area or wild river special floodplain management area, this aspect of development is prohibited development and a development application cannot be made. If this is the only aspect of development, then that is the end of part 7 of this checklist, otherwise continue to question 7.5

7.5 Is any part of the proposed material change of use of premises on land to which a property development plan under the *Wild Rivers Act 2005* applies?

☐ No	- A development permit is required for this aspect of development and this aspect of development requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency - You must complete <i>IDAS form 25—Aquaculture</i> - End of part 7 of this checklist
☐ Yes	Continue to question 7.6

7.6 Is the proposed material change of use inconsistent with the property development plan under the *Wild Rivers Act 2005*?

☐ No	- A development permit is required for this aspect of development and this aspect of development requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency - You must complete <i>IDAS form 25—Aquaculture</i> - End of part 7 of this checklist
☐ Yes	- This aspect of development is prohibited development and a development application can not be made for this aspect of development - End of part 7 of this checklist

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 2, item 10
- Sustainable Planning Regulation 2009, schedule 3, part 2, table 2, item 1
- Sustainable Planning Regulation 2009, schedule 6
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 28
- Sustainable Planning Act 2009*, schedule 1, items 2 and 6

Part 8—Agriculture and animal husbandry activities

8.1 Is the proposed material change of use of premises for animal husbandry activities in a wild river high preservation area or wild river special floodplain management area?

☐ No	Continue to question 8.2
☐ Yes	To the extent the development is in a wild river high preservation area or wild river special floodplain management area, it is prohibited development and a development application cannot be made. If this is the only aspect of development, end of part 8 of this checklist, otherwise continue to question 8.2

8.2 Is the proposed material change of use of premises for agricultural activities in any of the following?

• A wild river high preservation area	☐ Yes ☐ No
• A wild river preservation area or wild river special floodplain management area and the development involves the production of a high risk species	☐ Yes ☐ No
• A wild river special floodplain management area and the development is for agricultural activities that involve irrigation	☐ Yes ☐ No

- If **yes** to any of the above, this aspect of development is prohibited development and a development application cannot be made. If this is the only aspect of development, end of part 8 of checklist, otherwise continue to question 8.3
- If **no** to all of the above, continue to question 8.3

8.3 Will the development be carried out on land to which a property development plan under the *Wild Rivers Act 2005* applies?

☐ No	• A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency • Your application must include <i>IDAS form 29—Agricultural activities in a wild river area</i> or <i>IDAS form 30—Animal husbandry activities in a wild river area</i>
☐ Yes	• Continue to question 8.4

8.4 Is the development inconsistent with any property development plan that applies to the land?

☐ Yes	• This aspect of the development is prohibited development and a development application cannot be made. End of part 8 of checklist
☐ No	• A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or referral agency • Your application must include <i>IDAS form 29—Agricultural activities in a wild river area</i> or <i>IDAS form 30—Animal husbandry activities in a wild river area</i>

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 2, item 11
- Sustainable Planning Regulation 2009, schedule 6
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 41
- *Sustainable Planning Act 2009*, schedule 1, items 1 and 2

Part 9—Environmentally relevant activities (ERA)**9.1 Has an environmental authority to carry out a concurrence ERA been approved for the premises?**

☒ No	• Continue to question 9.4
☐ Yes	• Continue to question 9.2

9.2 Is the relevant ERA and the concurrence ERA approved under the environmental authority to be carried out under the environmental authority?

☐ No	• Continue to question 9.4
☐ Yes	• Continue to question 9.3

9.3 Does the relevant ERA have a lower aggregate environmental score than the concurrence ERA approved under the environmental authority, under the Environmental Protection Regulation 2008, section 14(1)?

☐ No	Continue to question 9.4
☐ Yes	This aspect of development does not require a development permit. End of checklist

9.4 Do all of the following apply?

The environmentally relevant activity is to be carried out in the North Stradbroke Island Region.	☐ Yes ☒ No
The environmentally relevant activity is mentioned in the Environmental Protection Regulation 2008, schedule 2, part 4, section 16.	☐ Yes ☐ No
The environmentally relevant activity involves dredging or extracting more than 10 000 tonnes of material a year.	☐ Yes ☐ No

- If **yes** to all of the above, this aspect of development is prohibited development (to the extent it involves dredging or extracting more than 10000 tonnes of material a year) and a development application cannot be made. If this is the only aspect of development, end of checklist, otherwise continue to question 9.5
- If **no** to any of the above, continue to question 9.5

9.5 Is any part of the proposed material change of use of premises for an environmentally relevant activity intended to be located in a wild river area?

☒ No	Go to question 9.14
☐ Yes	Continue to question 9.6

9.6 Does the proposed development involve development in waters in a wild river area that is for an extraction ERA?

☒ No	Go to question 9.8
☐ Yes	Continue to question 9.7

9.7 Will the development application for the proposed development be accompanied by an allocation notice?

☐ No	This aspect of development is prohibited development and a development application cannot be made. If this is the only aspect of development, end of checklist, otherwise continue to question 9.8
☐ Yes	Continue to question 9.8

9.8 Does the proposed development involve development in a wild river high preservation area or a wild river special floodplain management area?

☒ No	Go to question 9.10
☐ Yes	Continue to question 9.9

9.9 Is the proposed development any of the following?

A sewage ERA under the <i>Environmental Protection Act 1994</i> , section 174(4)	☐ Yes ☐ No
A water treatment ERA under the <i>Environmental Protection Act 1994</i> , section 174(4)	☐ Yes ☐ No

A dredging ERA	☐ Yes ☐ No
An extraction ERA, if the activity is a low impact activity carried out outside waters and is for specified works, residential complexes, or another commercial, industrial or residential purpose in a designated urban area, in the wild river high preservation area or a wild river special floodplain management area	☐ Yes ☐ No
A screening ERA, if the activity is carried out outside waters and is for specified works, or residential complexes, in the wild river high preservation area or a wild river special floodplain management area	☐ Yes ☐ No
A crude oil or petroleum product storage ERA, if the activity is for residential complexes in the wild river high preservation area or a wild river special floodplain management area, and is carried out outside a designated urban area	☐ Yes ☐ No
An exempt prescribed ERA under the <i>Environmental Protection Act 1994</i> , section 174(4), in a designated urban area	☐ Yes ☐ No

- If **yes** to any of the above, continue to question 9.10
- If **no** to all of the above, this aspect of development is prohibited development and a development application cannot be made. If this is the only aspect of development, end of checklist, otherwise continue to question 9.10

9.10 Does the proposed development involve an extraction ERA in a wild river floodplain management area?

☒ No	• Go to question 9.12
☐ Yes	• Continue to question 9.11

9.11 Is the proposed development either of the following?

A low impact activity carried out outside waters	☐ Yes ☐ No
For specified works, residential complexes, or another commercial, industrial or residential purpose in a designated urban area, in the wild river floodplain management area	☐ Yes ☐ No

- If **yes** to either of the above, continue to question 9.12
- If **no** to all of the above, this aspect of development is prohibited development and a development application cannot be made. If this is the only aspect of development, end of checklist, otherwise continue to question 9.12

9.12 Will the development be carried out on land to which a property development plan under the *Wild Rivers Act 2005* applies?

☒ No	• Go to question 9.14
☐ Yes	• Continue to question 9.13

9.13 Is the development inconsistent with any property development plan that applies to the land?

☐ Yes	• This aspect of the development is prohibited development and a development application cannot be made. End of checklist
☐ No	• Continue to question 9.14

9.14 Is the concurrence ERA devolved to local government under the Environmental Protection Regulation 2008?

☒ No	- A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency - Your application must include <i>IDAS form 8—Environmentally relevant activity</i> - End of checklist
☐ Yes	- A development permit is required and this application requires assessment by the local government as assessment manager or concurrence agency - End of checklist

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 2, item 1
- Sustainable Planning Regulation 2009, schedule 6
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 1
- Sustainable Planning Act 2009*, schedule 1, items 2, 9, 10, 11 and 13

Privacy—Please refer to your assessment manager, referral agency and/or building certifier for further details on the use of information recorded in this form.

Disclaimer:

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Date received		Reference numbers	
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Schedule 3 Assessable Development

Checklist 4—Operational work

(Sustainable Planning Act 2009 version 3.0 effective 1 July 2013)

This checklist only applies when the development application seeks approval for operational work. Before completing this checklist, please complete *Checklist 1—Various aspects of development*.

You may complete this checklist as part of your development application. The checklist will:

- help you identify whether you need to make a development application for the proposed development
- help you identify the relevant Integrated Development Assessment System (IDAS) form you need to complete as part of your application
- assist in identifying the assessment manager or referral agency for development that is assessable development under schedule 3 of the Sustainable Planning Regulation 2009.

If your development involves reconfiguring a lot, building work or material change of use, it is recommended you complete *Checklist 2—Material change of use*, *Checklist 3—Reconfiguring a lot*, or *checklist 5—Building work*, where relevant.

If you are unsure of any answers to questions, phone or visit your local government, or go to the Department of State Development, Infrastructure and Planning's website at www.dsdip.qld.gov.au.

All terms used in this checklist have the meaning given in the *Sustainable Planning Act 2009* or the Sustainable Planning Regulation 2009.

Part 1—General questions

1.1 Is the operational work clearing native vegetation on:

- freehold land
- indigenous land
- any of the following under the Land Act 1994:
 - land subject to a lease
 - a road
 - trust land, other than indigenous land
 - land subject to a licence or permit?

- | | |
|---|-------------------------------------|
| ☒ No | • Continue to question 1.2 |
| ☒ Yes | • Complete part 2 of this checklist |

1.2 Is any of the proposed operational work associated with reconfiguring a lot and the reconfiguration is also assessable development?

- | | |
|------------------------------|-------------------------------------|
| ☐ No | • Continue to question 1.3 |
| ☐ Yes | • Complete part 3 of this checklist |

1.3 Does any of the proposed operational work involve taking or interfering with:	
• water from a watercourse, lake or spring, or from a dam constructed on a watercourse or lake • artesian water as defined under the <i>Water Act 2000</i>, schedule 4 • overland flow water • subartesian water	
☒ No	• Continue to question 1.4
☐ Yes	• Complete part 4 of this checklist
1.4 Is the operational work the construction of a dam, or carried out in relation to a dam, and, because of the works, the dam must be failure impact assessed?	
☐ No	• Continue to question 1.5
☐ Yes	• Complete part 5 of this checklist
1.5 Is any of the proposed operational work for agricultural activities or animal husbandry activities (as defined in the <i>Wild Rivers Act 2005</i>) in a wild river area?	
☒ No	• Continue to question 1.6
☐ Yes	• Complete part 6 of this checklist
1.6 Is any of the proposed operational work tidal works?	
☒ No	• Continue to question 1.7
☐ Yes	• Complete part 7 of this checklist
1.7 Is any of the operational work proposed to be carried out completely or partly within a coastal management district?	
☒ No	• Continue to question 1.8
☐ Yes	• Complete part 8 of this checklist
1.8 Is any of the proposed operational work for constructing or raising waterway barrier works as defined under the <i>Fisheries Act 1994</i>?	
☐ No	• Continue to question 1.9
☐ Yes	• Complete part 9 of this checklist
1.9 Is any of the proposed operational work to be carried out completely or partly within a declared fish habitat area as defined under the <i>Fisheries Act 1994</i>?	
☒ No	• Continue to question 1.10
☐ Yes	• Complete part 10 of this checklist
1.10 Is any of the proposed operational work removing, destroying or damaging marine plants as defined under the <i>Fisheries Act 1994</i>?	
☒ No	• Continue to question 1.11

☐ Yes	Complete part 11 of this checklist
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1.11 Does the proposal involve operational works that are high impact earthworks in the Great Barrier Reef Wetland Protection Area?

☐ No	End of checklist
☐ Yes	Complete part 12 of this checklist

Part 2—Clearing native vegetation

2.1 Do any of the following apply?

The clearing is on premises to which structure plan arrangements apply.	☐ Yes ☒ No
The clearing is clearing, or for another activity or matter, mentioned in schedule 24, part 1 of the Sustainable Planning Regulation 2009.	☐ Yes ☐ No
The clearing is mentioned in schedule 24, part 2 of the Sustainable Planning Regulation 2009, as clearing for the particular land.	☐ Yes ☐ No

- If you answered **yes** to any of the above, this aspect of your operational work is not assessable development
- If you answered **no** to ALL of the above, continue to question 2.2

2.2 Is the proposed vegetation clearing for a relevant purpose under the *Vegetation Management Act 1999*, section 22A for one or more of the following?

A project declared to be a coordinated project under the <i>State Development and Public Works Organisation Act 1971</i> , section 26 outside of a wild river high preservation area under the <i>Wild Rivers Act 2005</i>	☐ Yes ☒ No
Necessary to control non-native plants or declared pests	☐ Yes ☒ No
To ensure public safety	☐ Yes ☒ No
For establishing a necessary fence, firebreak, road or vehicular track, or for constructing necessary built infrastructure, (each 'relevant infrastructure') and the clearing for the relevant infrastructure can not reasonably be avoided or minimised	☐ Yes ☐ No
A natural and ordinary consequence of other assessable development for which a development approval was given under the repealed <i>Integrated Planning Act 1997</i> , or a development application was made under that Act, before 16 May 2003 and is outside an area declared to be a declared area part 2, division 4, subdivision 2 of the <i>Vegetation Management Act 1999</i> .	☐ Yes ☒ No
For fodder harvesting outside an area declared to be a declared area part 2, division 4, subdivision 2 of the <i>Vegetation Management Act 1999</i> :	☐ Yes ☐ No
For thinning	☐ Yes ☒ No
For clearing of encroachment	☐ Yes ☒ No
For an extractive industry outside: - a wild river high preservation area under the <i>Wild Rivers Act 2005</i>, or - an area declared to be a declared area part 2, division 4, subdivision 2 of the <i>Vegetation Management Act 1999</i>	☐ Yes ☒ No
For clearing regrowth vegetation on freehold land, indigenous land or leases issued under the <i>Land Act 1994</i> for agriculture or grazing purposes, in an area shown as a registered area of agriculture on a registered area of agriculture map in a wild river high preservation area under the <i>Wild River Act 2000</i>	☐ Yes ☒ No

The Minister responsible for administering the <i>Vegetation Management Act 1999</i> is satisfied the development applied for is a for special indigenous purpose under the <i>Cape York Peninsula Heritage Act 2007</i> outside: - a wild river high preservation area under the <i>Wild Rivers Act 2000</i>, or - an area declared to be a declared area part 2, division 4, subdivision 2 of the <i>Vegetation Management Act 1999</i>	☐ Yes ☒ No
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- If you answered **no** to ALL of the above, then the clearing is not for a relevant purpose and this aspect of the development is prohibited development. If this is the only aspect of vegetation clearing then that is the end of part 2 of this checklist, otherwise continue to question 2.3
- If **yes** to any of the above, continue to question 2.3

2.3 Is any part of the vegetation clearing on land to which a property development plan under the *Wild Rivers Act 2005* applies?

☐ No	Go to question 2.5
☐ Yes	Continue to question 2.4

2.4 Is the proposed vegetation clearing consistent with the property development plan under the *Wild Rivers Act 2005*?

☐ No	- This aspect of development is prohibited development and a development application can not be made for this aspect of development. - If this is the only aspect of vegetation clearing then that is the end of part 2 of this checklist, otherwise continue to question 2.5.
☐ Yes	Continue to question 2.5

2.5 Is the proposed vegetation clearing associated with a material change of use or reconfiguring a lot for which referral is required in relation to clearing vegetation under schedule 7, table 3, item 10 and table 2, item 4 of the Sustainable Planning Regulation 2009?

☐ No	- The proposed operational work for clearing native vegetation is assessable development and a development permit is required. - This application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Clearing native vegetation state code</i> in the State Development Assessment Provisions (SDAP). - You must complete <i>IDAS Form 11—Clearing native vegetation</i> - End of part 2 of this checklist
☒ Yes	- This aspect of development is assessable development. DSDIP may be a concurrence agency for the application (see schedule 7, table 2, item 4 and table 3, item 10 of the Sustainable Planning Regulation 2009) and will assess the application against the <i>Clearing native vegetation state code</i> in the SDAP. - If DSDIP is a concurrence agency for the application, you must refer a copy of your application to DSDIP. - End of part 2 of this checklist

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 4, item 1
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 5 and schedule 7, table 3, item 10
- Vegetation Management Act 1999*, section 22A

Part 3—Operational work for reconfiguring a lot

3.1 Is any part of the operational work for reconfiguring a lot in a priority development area?

☐ No	Continue to question 3.2
☐ Yes	- This aspect of the development is not assessable development. - End of part 3 of this checklist

3.2 Do all of the following apply:

- the land is in the area of a local government that, under the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009*, is a participating local government for a distributor-retailer
- the participating local government is the assessment manager
- the development application is made before 1 March 2014

☐ No	- This aspect of the development is assessable development and you will need a development permit. - The local government will be the assessment manager for the application. - End of part 3 of this checklist
☐ Yes	- This aspect of the development is assessable development and you will need a development permit - The local government will be the assessment manager for the application and the distributor-retailer (or SARA) will be a concurrence agency for the application. - End of part 3 of this checklist

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 4, item 2
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 47

Part 4—Taking or interfering with water

4.1 Is the proposed operational work to be carried out in a priority development area or on premises to which structure plan arrangements apply?

☐ No	Continue to question 4.2
☐ Yes	- This aspect of development is not assessable development and does not require a development permit. - End of part 4 of this checklist.

4.2 Does any of the proposed operational work involve taking or interfering with water from a watercourse, lake or spring or from a dam constructed on a watercourse or lake?

☐ No	Go to question 4.17
☐ Yes	Continue to question 4.3

4.3 Are the proposed works for any of the following purposes?

Taking water from a watercourse, lake or spring in an emergency situation for a public purpose or fighting a fire destroying, or threatening to destroy, a dwelling house	☐ Yes ☐ No
Taking water from a watercourse, lake or spring if: - the water is taken by the owner of land adjoining the watercourse, lake or spring - the water is taken for domestic purposes or stock purposes	☐ Yes ☐ No

Taking water from a watercourse, lake or spring for camping purposes or for watering travelling stock	☐ Yes ☐ No
Using a water truck to pump water	☐ Yes ☐ No

- If **no** to all of the above, continue to question 4.4
- If **yes** to any of the above, this aspect of development does not require a development permit.
 - If this is the only aspect of taking or interfering with water proposed then that is the end of part 4 of this checklist
 - If there are other aspects of taking or interfering with water proposed, continue to question 4.4

4.4 Are the proposed works self-assessable development under schedule 3, part 2, table 4, item 1 of the Sustainable Planning Regulation 2009?

☐ No	• Go to question 4.5
☐ Yes	• This aspect of development is self-assessable development and must comply with any relevant self assessable code • If the proposal involves more than one aspect of operational work for taking or interfering with water, and the other aspect is not self-assessable development, then continue to question 4.5

4.5 Is any of the proposed operational work to be carried out in a wild river area under the *Wild Rivers Act 2005*?

☒ No	• Go to question 4.12
☐ Yes	• Continue to question 4.6

4.6 Do both of the following apply:

- The proposed operational work is to be carried out in a wild river high preservation area or a wild river special floodplain management area
- the work interferes with the flow of water in a watercourse, lake or spring in the area

☐ No	• Go to question 4.8
☐ Yes	• Continue to question 4.7

4.7 Do any of the following apply?

The works are for the maintenance of works as defined under the <i>Water Act 2000</i>	☐ Yes ☐ No
The works increase the interference with water in Lake Eyre Basin to the extent necessary for taking water for town water supply demands	☐ Yes ☐ No
The work is authorised wild river operational work for the area	☐ Yes ☐ No

- If **no** to all of the above, then this aspect of the development is prohibited development
 - If this is the only aspect of taking and interfering with water proposed, then that is the end of part 4 of this checklist
 - If other aspects of taking and interfering with water are proposed, continue to question 4.8
- If **yes** to any of the above, continue to question 4.8

4.8 Does the proposed operational work involve interfering with the flow of water in a nominated waterway, as defined under the *Wild Rivers Act 2005*, in a wild river preservation area?

☒ No	• Go to question 4.10
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☐ Yes	Continue to question 4.9
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4.9 Does the proposed work involve any of the following?

The waterway being interfered with is a dam or weir as defined under the <i>Water Act 2000</i> .	☐ Yes ☐ No
The proposed work is authorised wild river operational work for the area	☐ Yes ☐ No

- If **no** to all of the above, then this aspect of the development is prohibited development
 - If this is the only aspect of taking and interfering with water proposed, then that is the end of part 4 of this checklist
 - If other aspects of taking and interfering with water are proposed, continue to question 4.12
- If **yes** to any of the above, continue to question 4.10

4.10 Is any part of the proposed works on land to which a property development plan under the *Wild Rivers Act 2005* applies?

☒ No	Go to question 4.12
☐ Yes	Continue to question 4.11

4.11 Is the proposed works consistent with the property development plan under the *Wild Rivers Act 2005*?

☐ No	- This aspect of development is prohibited development and a development application can not be made for this aspect of development. - If this is the only aspect of taking or interfering with water then that is the end of part 4 of this checklist, otherwise Continue to question 4.12.
☐ Yes	Continue to question 4.12

4.12 Is the work for a water pump?

☐ No	Continue to question 4.13
☐ Yes	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - You must complete <i>IDAS form 13—Watercourse pump</i> - If this is the only aspect of taking or interfering with water proposed, then that is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, then continue to question 4.13

4.13 Is the work for water storage (other than for a dam requiring failure impact assessment)?

☐ No	Continue to question 4.14
☐ Yes	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - You must complete <i>IDAS form 14—Water storage</i> - If this is the only aspect of taking or interfering with water proposed, then that is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, then continue to question 4.14

4.14 Is the work for gravity diversion from a watercourse?

☒ No	Continue to question 4.15
☐ Yes	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - You must complete <i>IDAS form 15—Gravity diversion from a watercourse</i> - If this is the only aspect of taking or interfering with water proposed, then that is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, then continue to question 4.15

4.15 Is the work for a watercourse diversion?

☐ No	Continue to question 4.16
☐ Yes	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - You must complete <i>IDAS form 17—Watercourse diversion</i> - If this is the only aspect of taking or interfering with water proposed, then that is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, then continue to question 4.16

4.16 Is the work for other work for taking or interfering with water?

☒ No	Continue to question 4.17
☐ Yes	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - You must complete <i>IDAS form 21—Other work in a watercourse</i> - If this is the only aspect of taking or interfering with water proposed, then that is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, then continue to question 4.17

4.17 Does any of the proposed operational work involve taking or interfering with artesian water as defined under the *Water Act 2000*, schedule 4 (other than using a water truck to pump water)?

☐ No	Go to question 4.20
☐ Yes	Continue to question 4.18

4.18 Is any part of the proposed works on land to which a property development plan under the *Wild Rivers Act 2005* applies?

☒ No	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - You must complete <i>IDAS form 12—Taking or interfering with artesian or sub-artesian water</i> - If this is the only aspect of taking or interfering with water proposed, then that is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, then continue to question 4.20
☐ Yes	Continue to question 4.19

4.19 Is the proposed works consistent with the property development plan under the *Wild Rivers Act 2005*?

☐ No	- This aspect of development is prohibited development and a development application can not be made for this aspect of development. - If this is the only aspect of taking or interfering with water then that is the end of part 4 of this checklist, otherwise continue to question 4.20.
☐ Yes	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - You must complete <i>IDAS form 12—Taking or interfering with artesian or sub-artesian water</i> - If this is the only aspect of taking or interfering with water proposed, then that is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, then continue to question 4.20

4.20 Does the proposed operational work involve taking or interfering with overland flow water (other than using a water truck to pump water)?

☐ No	Go to question 4.29
☐ Yes	Continue to question 4.21

4.21 Is the proposed taking or interfering :

Mentioned as assessable development in a wild river declaration under the <i>Wild Rivers Act 2005</i>	☐ Yes ☐ No
In an area declared under the <i>Water Act 2000</i> to be a drainage and embankment area and the operations are declared under that Act to be assessable development	☐ Yes ☐ No
In a wild river floodplain management area and the operations are: - specified works; or - stated in the wild river declaration for the area to be assessable development	☐ Yes ☐ No
Mentioned as assessable development in a water resource plan, or prescribed as assessable development under a regulation under the <i>Water Act 2000</i>	☐ Yes ☐ No

- If **yes** to any of the above, continue to question 4.22.
- If **no** to all of the above and there are no other aspects of taking or interfering with water proposed, then that is the end of part 4 of this checklist. If other aspects of taking or interfering with water are proposed, go to question 4.29

4.22 Is any of the proposed operational work to be carried out in a wild river area under the *Wild Rivers Act 2005*?

☐ No	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - You must complete <i>IDAS form 19—Taking overland flow</i> - If this is the only aspect of taking or interfering with water proposed, then that is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, then continue to question 4.29
☐ Yes	Continue to question 4.23

4.23 Is any part of the proposed works on land to which a property development plan under the *Wild Rivers Act 2005* applies?

☐ No	Go to question 4.25
☐ Yes	Continue to question 4.24

4.24 Is the proposed works consistent with the property development plan under the *Wild Rivers Act 2005*?

☐ No	- This aspect of development is prohibited development and a development application can not be made for this aspect of development. - If this is the only aspect of taking or interfering with water then that is the end of part 4 of this checklist, otherwise go to question 4.25.
☐ Yes	Go to question 4.25

4.25 For operational work that is the taking of overland flow water, is any of the proposed works to be carried out in a wild river high preservation area or a wild river special floodplain management area?

☐ No	Go to question 4.27
☐ Yes	Continue to question 4.26
☐ N/A	Go to question 4.27

4.26 Is the proposed taking of overland flow water stated in a wild river declaration for the area to be assessable development for which a development application can be made?

☐ No	- This aspect of the development is prohibited development - If this is the only aspect of taking and interfering with water proposed, then that is the end of part 4 of this checklist - If other aspects of taking and interfering with water are proposed, continue to question 4.27
☐ Yes	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - If there are no other aspects of taking or interfering proposed, then this is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, continue to question 4.27

4.27 For operational work that is interfering with overland flow water, is any of the proposed works to be carried out in a wild river floodplain management area or a wild river special floodplain management area?

☐ No	- A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. - If there are no other aspects of taking or interfering proposed, then this is the end of part 4 of this checklist - If there are other aspects of taking or interfering with water proposed, Go to question 4.29
☐ Yes	Continue to question 4.28
☐ N/A	Go to question 4.29

4.28 Do both of the following apply:

The operations are declared under the <i>Water Act 2000</i> or the wild river declaration for the area to be assessable development	☐ Yes ☐ No
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The operational work is not for specified works in the area and is not stated in the wild river declaration for the area to be assessable development for which a development application may be made	☐ Yes ☐ No
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- If **yes** to all of the above, the development is prohibited development and a development application cannot be made.
- If **no** to all of the above, a development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the *Sustainable management of water resources state code* in the SDAP.
- If there are no other aspects of taking or interfering with water proposed, then that is the end of part 4 of this checklist.
- If other aspects of taking or interfering with water are proposed, continue to question 4.29

4.29 Does the proposed operational work involve taking or interfering with subartesian water (other than using a water truck to pump water)?

☐ No	• End of part 4 of this checklist.
☐ Yes	• Continue to question 4.30

4.30 Is the proposed taking or interfering with subartesian water mentioned or prescribed as assessable development in any of the following?

A water resource plan under the <i>Water Act 2000</i>	☐ Yes ☐ No
A wild river declaration under the <i>Wild Rivers Act 2005</i>	☐ Yes ☐ No
A regulation under the <i>Water Act 2000</i>	☐ Yes ☐ No

- If **yes** to any of the above, continue to question 4.31
- If **no** to all of the above, end of part 4 of this checklist.

4.31 Is any part of the proposed works on land to which a property development plan under the *Wild Rivers Act 2005* applies?

☐ No	• A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. • You must complete <i>IDAS form 12—Taking or interfering with artesian or sub-artesian water</i> • End of part 4 of this checklist
☐ Yes	• Continue to question 4.32

4.32 Is the proposed works consistent with the property development plan under the *Wild Rivers Act 2005*?

☐ No	• This aspect of development is prohibited development and a development application can not be made for this aspect of development. • End of part 4 of this checklist
☐ Yes	• A development permit is required and this application will be assessed by DSDIP's SARA as assessment manager or concurrence agency against the <i>Sustainable management of water resources state code</i> in the SDAP. • You must complete <i>IDAS form 12—Taking or interfering with artesian or sub-artesian water</i> • End of part 4 of this checklist

Part 5—For particular dams

5.1 Is the proposed operational work for the following?

The construction of a dam more than ten metres in height and having a storage capacity of more than 1 500 megalitres	☐ Yes ☐ No
The construction of a dam more than ten metres in height and having a storage capacity of more than 750 megalitres and a catchment area that is more than three times its maximum surface area at full supply level	☐ Yes ☐ No
Work carried out in relation to an existing non-referable dam that will result in the dam being more than ten metres in height and having a storage capacity of more than 1 500 megalitres	☐ Yes ☐ No
Work to an existing non-referable dam that will result in the dam being more than ten metres in height and having a storage capacity of more than 750 megalitres and a catchment area that is more than three times its maximum surface area at full supply level	☐ Yes ☐ No
Works that involve the increase of capacity of a non-referable dam by more than 10 per cent if the dam is: - more than ten metres in height and having a storage capacity of more than 1 500 megalitres, or - more than ten metres in height and having a storage capacity of more than 750 megalitres and a catchment area that is more than three times its maximum surface area at full supply level	☐ Yes ☐ No
Works carried out in relation to a referable dam if, because of the works, the storage capacity of the dam will increase by more than 10% after the works are carried out.	☐ Yes ☐ No
Constructing a dam for which the chief executive under the <i>Water Supply (Safety and Reliability) Act 2008</i> has given a notice to have the dam failure impact assessed.	☐ Yes ☐ No

- If **no** to all of the above, the proposed operational work is not required to be failure impact assessed and is therefore not assessable development. This is the end of part 5 of this checklist
- If **yes** to any of the above, this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the *Referrable dams state code* in the SDAP.
 - You must complete *IDAS form 16—Particular dams*
 - End of part 5 of this checklist

Part 6—For a wild river area

6.1 Is the proposed operational work declared to be assessable development under the wild river declaration for the area?

☐ No	This aspect of development is not assessable development and no development permit is required End of part 6 of this checklist
☐ Yes	Continue to question 6.2

6.2 Does the proposed work involve any of the following?

Any part of the operational work is located in a wild river high preservation area	☐ Yes ☐ No
The work is for agricultural activities in a wild river preservation area or a wild river special floodplain management area in relation to the production of a high risk species as defined under the <i>Wild Rivers Act 2005</i>	☐ Yes ☐ No
The work is for animal husbandry activities in a wild river special floodplain management area	☐ Yes ☐ No

- If **yes** to any of the above, this aspect of development is prohibited development and a development application can not be made. This is the end of part 6 of this checklist
- If **no** to all of the above, continue to question 6.3

6.3 Will the proposed operational work be carried out on land to which a property development plan applies?

☐ No	• This application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Agricultural or animal husbandry activities in a wild river area state code</i> in the SDAP. • You must complete <i>IDAS form 29—Agricultural activities in a wild river area</i> if the operational work is for agricultural activities • You must complete <i>IDAS form 30—Animal husbandry activities in a wild river area</i> if the operational work is for animal husbandry activities • End of part 6 of this checklist
☐ Yes	• Continue to question 6.4

6.4 Is the proposed development consistent with the property development plan?

☐ No	• This aspect of development is prohibited development and a development application cannot be made • End of part 6 of this checklist
☐ Yes	• This application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Agricultural or animal husbandry activities in a wild river area state code</i> in the SDAP. • You must complete <i>IDAS form 29—Agricultural activities in a wild river area</i> if the operational work is for agricultural activities • You must complete <i>IDAS form 30—Animal husbandry activities in a wild river area</i> if the operational work is for animal husbandry activities • End of part 6 of this checklist

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 4, item 9
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 42
- *Sustainable Planning Act 2009*, schedule 1, items 1 and 2

Part 7—Tidal work

7.1 Is the proposed tidal work any of the following:

Excluded work	☐ Yes ☐ No
Work that is self-assessable development under schedule 3, part 2, table 4, item 8 of the Sustainable Planning Regulation 2009	☐ Yes ☐ No
Work carried out in a priority development area	☐ Yes ☐ No
Work carried out on premises to which structure plan arrangements apply	☐ Yes ☐ No

- If **no** to all of the above, continue to question 7.2.
- If **yes** to any of the above, this aspect of development is not assessable development and a development permit is not required.

7.2 Is any of the proposed tidal work to be carried out in a wild river area under the *Wild Rivers Act 2005*?

☐ No	Go to question 7.6
☐ Yes	Continue to question 7.3

7.3 Is the proposed tidal work for any of the specified works under the *Wild Rivers Act 2005*?

Infrastructure and works prescribed under a regulation to be necessary for disaster management	☐ Yes ☐ No
De-snagging that is the minimum necessary to allow safe navigation of a marked navigable channel	☐ Yes ☐ No
Infrastructure that is roads, railways, pipelines conveyor belts and cables	☐ Yes ☐ No
Jetties and boat ramps for use by the public	☐ Yes ☐ No
Works for rehabilitation of land (e.g. rehabilitation of abandoned mines)	☐ Yes ☐ No
Infrastructure for the transmission or distribution of electricity	☐ Yes ☐ No
Other infrastructure, prescribed under a regulation that relates to the transportation, movement, transmission or flow of anything through a wild river area including, for example, goods, materials, substances, matter, particles with or without charge, light, energy, information and anything generated or produced	☐ Yes ☐ No

- If **no** to all of the above, this aspect of development is prohibited development and a development application cannot be made. End of part 7 of this checklist
- If **yes** to any of the above, continue to question 7.4

7.4 Will the proposed operational work be carried out on land to which a property development plan applies?

☐ No	Go to question 7.6
☐ Yes	Continue to question 7.5

7.5 Is the proposed development consistent with the property development plan?

☐ No	- This aspect of development is prohibited development and no application can be made - End of part 7 of this checklist
☐ Yes	Continue to question 7.6

7.6 Is any of the proposed tidal work prescribed tidal work?

☐ No	- This application requires assessment by the chief executive of DSDIP as assessment manager or concurrence against the <i>Tidal works, or development in a coastal management district state code</i> in the SDAP. - You must complete <i>IDAS form 23—Tidal works and development within coastal management districts</i> - End of part 7 of this checklist
☐ Yes	- You must complete <i>IDAS form 23—Tidal works and development within coastal management districts</i> - This application requires assessment by the local government as assessment manager and the chief executive of DSDIP will be a concurrence agency for the application; you must refer a copy of the application to DSDIP - End of part 7 of this checklist

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 4, item 5
- Sustainable Planning Regulation 2009, schedule 7, table 2, items 13 to 18
- *Sustainable Planning Act 2009*, schedule 1, items 2 and 4

Part 8—Coastal management

8.1 Is the proposed operational work any of the following:

Excluded works	☐ Yes ☐ No
Work that is self-assessable development under schedule 3, part 2, table 4, item 8 of the Sustainable Planning Regulation 2009	☐ Yes ☐ No
Work carried out in a priority development area	☐ Yes ☐ No
Work carried out on premises to which structure plan arrangements apply	☐ Yes ☐ No

- If **no** to all of the above, continue to question 8.2.
- If **yes** to any of the above, this aspect of development is not assessable development and a development permit is not required. End of part 8 of this checklist.

8.2 Is the proposed operational work for any of the following?

Interfering with quarry material as defined under the <i>Coastal Protection and Management Act 1995</i> on state coastal land above high-water mark	☐ Yes ☐ No
Disposing of dredge spoil or other solid waste material in tidal water	☐ Yes ☐ No
Constructing an artificial waterway	☐ Yes ☐ No
Removing or interfering with coastal dunes on land, other than State coastal land, that is in an erosion prone area as defined in the <i>Coastal Protection and Management Act 1995</i> and above high-water mark	☐ Yes ☐ No

- If you answered **no** to all of the above, a development permit is not required for this aspect of development and that is the end of part 8 of this checklist
- If you answered **yes** to any of the above, continue to question 8.3

8.3 Is any of the proposed work to be carried out in a wild river area under the *Wild Rivers Act 2005*?

☐ No	• This application may require assessment by DSDIP's SARA as assessment manager or concurrence agency against the <i>Tidal works, or development in a coastal management district state code</i> in the SDAP. • You must complete <i>IDAS form 23—Tidal works and development within coastal management districts</i> • End of part 8 of this checklist
☐ Yes	• Continue to question 8.4

8.4 Is all of the proposed operational work for specified works under the *Wild Rivers Act 2005*?

☐ No	• This aspect of the development is prohibited development and a development application cannot be made • End of part 8 of this checklist
☐ Yes	• Continue to question 8.5

8.5 Will the proposed operational work be carried out on land to which a property development plan applies?

☐ No	- This application may require assessment by DSDIP's SARA as assessment manager or concurrence agency against the <i>Tidal works, or development in a coastal management district state code</i> in the SDAP. - You must complete <i>IDAS form 23—Tidal works and development within coastal management districts</i> - End of part 8 of this checklist
☐ Yes	Continue to question 8.6

8.6 Is the proposed development consistent with the property development plan?

☐ No	- This aspect of development is prohibited development and a development application cannot be made - End of part 8 of this checklist
☐ Yes	- This application may require assessment by DSDIP's SARA as assessment manager or concurrence agency against the <i>Tidal works, or development in a coastal management district state code</i> in the SDAP. - You must complete <i>IDAS form 23—Tidal works and development within coastal management districts</i> - This aspect of development will be subject to the relevant wild river declaration for the area and assessment may be required for the purpose of the <i>Wild Rivers Act 2005</i> - End of part 8 of this checklist

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 4, item 5
- Sustainable Planning Regulation 2009, schedule 7, table 2, items 13 to 18
- Sustainable Planning Act 2009*, schedule 1, items 2 and 4

Part 9—Waterway barrier works

9.1 Is the proposed operational work any of the following:

Work that is self-assessable development under schedule 3, part 2 of the Sustainable Planning Regulation 2009	☐ Yes ☐ No
Work carried out on premises to which structure plan arrangements apply	☐ Yes ☐ No

- If **no** to all of the above, continue to question 9.2.
- If **yes** to any of the above, this aspect of development is not assessable development and a development permit is not required. End of part 9 of this checklist.

9.2 Is any of the proposed operational work to be carried out in a wild river area under the *Wild Rivers Act 2005*?

☐ Yes	- A development permit is required for this aspect of development. This application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Constructing or raising waterway barrier works in fish habitats state code</i> in the SDAP. - You must complete <i>IDAS form 27—Waterway barrier works</i>
☐ Yes	Continue to question 9.3

9.3 Is any of the proposed operational work to be carried out in a wild river high preservation area or a wild river special floodplain management area?

☐ No	Go to question 9.5
☐ Yes	Continue to question 9.4

9.4 Is the works for any of the following?

Specified works in the area	☐ Yes ☐ No
Maintenance of existing waterway barrier works	☐ Yes ☐ No
Constructing or raising temporary waterway barrier works associated with the carrying out of specified works or the maintenance of existing waterway barrier works	☐ Yes ☐ No
Constructing new waterway barrier works, or raising of an existing waterway barrier works, within the Lake Eyre Basin for storing water for town water supply demands	☐ Yes ☐ No
Authorised wild river operational work for the area	☐ Yes ☐ No

- If **no** to all of the above, this aspect of development is prohibited development and a development application cannot be made. That is the end of part 9 of this checklist
- If **yes** to any of the above, continue to question 9.5

9.5 Will the proposed operational work be carried out on land to which a property development plan applies?

☐ No	- A development permit is required for this aspect of development. This application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Constructing or raising waterway barrier works in fish habitats state code</i> in the SDAP. - You must complete <i>IDAS form 27—Waterway barrier works</i>
☐ Yes	Continue to question 9.6

9.6 Is the proposed development consistent with the property development plan?

☐ No	- This aspect of development is prohibited development and a development application cannot be made - End of part 9 of this checklist
☐ Yes	- A development permit is required for this aspect of development. This application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Constructing or raising waterway barrier works in fish habitats state code</i> in the SDAP. - You must complete <i>IDAS form 27—Waterway barrier works</i>

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 4, item 6
- Sustainable Planning Regulation 2009, schedule 3, part 2
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 29
- Sustainable Planning Act 2009*, schedule 1, items 2 and 6

Part 10—Declared fish habitat area

10.1 Is the operational work reasonably necessary for any of the following?

The maintenance of existing structures, including for example the following structures, if the structures were constructed in compliance with all the requirements under any Act relating to a structure of that type: • boat ramps, boardwalks, drains, fences, jetties, roads, safety signs, swimming enclosures and weirs • powerlines or associated powerline infrastructure.	☐ Yes ☐ No
Educational or research purposes relating to the declared fish habitat area	☐ Yes ☐ No
Monitoring the impact of development on the declared fish habitat area	☐ Yes ☐ No
The construction or placement of structures, including for example, safety signs, swimming enclosures and aids to navigation, if: • the impact on the area is minor • the structures are constructed in compliance with all the requirements, under any Act relating to a structure of that type.	☐ Yes ☐ No
Public benefit works, including, for example, the construction of runnels for mosquito control, the removal of Lyngbya and seed collection for site rehabilitation, if the impact on the area is minor	☐ Yes ☐ No

- If **yes** to any of the above, a permit is not required for this aspect of development but the proposed work must comply with any applicable self assessable codes
- If **no** to all of the above, continue to question 10.2

10.2 Is the proposed operational work to be carried out in a wild river area under the *Wild Rivers Act 2005*?

☐ No	• A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Development completely or partially in a declared fish habitat area state code</i> in the SDAP. • You must complete <i>IDAS form 27—Waterway barrier works</i> • End of part 10 of this checklist.
☐ Yes	• Continue to question 10.3

10.3 Is the proposed operational work to be carried out in a wild river high preservation area?

☐ No	• Go to question 10.5
☐ Yes	• Continue to question 10.4

- If **no**, this aspect of development is prohibited development and that is the end of part 10 of this checklist
- If **yes**, continue to question 10.5

10.5 Will the proposed operational work be carried out on land to which a property development plan applies?

☐ No	• A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency, against the <i>Development completely or partially in a declared fish habitat area state code</i> in the SDAP. • You must complete <i>IDAS form 27—Waterway barrier works</i> • End of part 10 of this checklist.
☐ Yes	• Continue to question 10.6

10.6 Is the proposed development consistent with the property development plan?

☐ No	- This aspect of development is prohibited development and a development application cannot be made - End of part 10 of this checklist
☐ Yes	- A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency, against the <i>Development completely or partially in a declared fish habitat area state code</i> in the SDAP. - You must complete <i>IDAS form 27—Waterway barrier works</i> - End of part 10 of this checklist

Section reference:

- Sustainable Planning Act 2009, schedule 1, items 2 and 8
- Sustainable Planning Regulation 2009, schedule 3, part 1, table 4, item 7
- Sustainable Planning Regulation 2009, schedule 3, part 2, table 4, item 3
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 26

Part 11—Removal, destruction or damage of a marine plant

11.1 Is the proposed operational work any of the following?

For reconfiguring a lot that is assessable development under table 3, item 1, if there is a development permit in effect for the reconfiguration	☐ Yes ☐ No
For a material change of use that is assessable development, if there is a development permit in effect for the change of use	☐ Yes ☐ No
Self-assessable development under schedule 3, part 2 of the Sustainable Planning Regulation 2009	☐ Yes ☐ No
Carried out in a priority development area	☐ Yes ☐ No
Carried out on premises to which structure plan arrangements apply	☐ Yes ☐ No

- If **yes** to any of the above, this aspect of development is not assessable development and no development permit is required. End of part 11 of this checklist.
- If **no** to all of the above, continue to question 11.2

11.2 Is the proposed operational work to be carried out in a wild river area under the *Wild Rivers Act 2005*?

☐ No	- A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Removal, destruction or damage of marine plants state code</i> in the SDAP. - You must complete <i>IDAS form 26—Marine plants and declared fish habitat areas</i>
☐ Yes	Continue to question 11.3

11.3 Is the proposed operational work any of the following?

Specified works in the area	☐ Yes ☐ No
Operational work that is a necessary and unavoidable part of installing or maintaining works or infrastructure required to support other development for which a development permit or compliance permit is not required or, if a development application or a request for compliance assessment is required, the permit is held or has been applied for.	☐ Yes ☐ No

- If **no** to all of the above, this aspect of development is prohibited development and a development application cannot be made. End of part 11 of this checklist.
- If **yes** to any of the above, continue to question 11.4

11.4 Will the proposed operational work be carried out on land to which a property development plan applies?

☐ No	• A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Removal, destruction or damage of marine plants state code</i> in the SDAP. • You must complete <i>IDAS form 26—Marine plants and declared fish habitat areas</i> • End of part 11 of this checklist.
☐ Yes	• Continue to question 11.5

11.5 Is the proposed development consistent with the property development plan?

☐ No	• This aspect of development is prohibited development and a development application cannot be made • End of part 11 of this checklist
☐ Yes	• A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Removal, destruction or damage of marine plants state code</i> in the SDAP. • You must complete <i>IDAS form 26—Marine plants and declared fish habitat areas</i> • End of part 11 of this checklist.

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 4, item 8
- Sustainable Planning Regulation 2009, schedule 3, part 2
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 30
- *Sustainable Planning Act 2009*, schedule 1, items 2 and 7

Part 12—Great Barrier Reef Wetland Protection Areas

12.1 Is the proposed operational work for a domestic housing activity only?

☐ No	• Continue to question 12.2
☐ Yes	• A development permit is not required for this aspect of development and this is the end of the checklist

12.2 Is the proposed operational work the natural and ordinary consequence of a material change of use or reconfiguring a lot for which the state was a concurrence agency under schedule 7, table 3, item 21A or table 2, item 43A of the Sustainable Planning Regulation 2009?

☐ No	• Continue to question 12.3
☐ Yes	• A development permit is not required for this aspect of development and this is the end of the checklist

12.3 Is the proposed operational work associated with government supported transport infrastructure or electricity infrastructure?

☐ No	• A development permit is required and this application requires assessment by the chief executive of DSDIP as assessment manager or concurrence agency against the <i>Wetland protection area state code</i> in the SDAP. • You must complete <i>IDAS form 33—Great Barrier Reef Wetland protection area</i> • End of this checklist
☐ Yes	• A permit is not required for this aspect of development but the proposed work must comply with any applicable self assessable code • End of this checklist

Section reference:

- Sustainable Planning Regulation 2009, schedule 3, part 1, table 4, item 10
- Sustainable Planning Regulation 2009, schedule 7, table 2, item 43B

Privacy—please refer to your assessment manager for further details on the use of information recorded in this form

Disclaimer:

While the Department of State Development, Infrastructure and Planning (DSDIP) believes that the information contained on this checklist and provided as part of this process will be of assistance to you, it is provided on the basis that you will not rely on the information. It is your responsibility to make your own enquiries regarding the interpretation and application of the applicable legislation to your circumstances.

To the full extent permitted by law, DSDIP expressly disclaims all liability (including but not limited to liability for negligence) for errors or omissions of any kind or for any loss (including direct and indirect losses), damage or other consequence which may arise from your reliance on this process and the information contained on this checklist.

OFFICE USE ONLY

Date received

Reference numbers

The Sustainable Planning Act 2009 is administered by DSDIP. This checklist and all other required application materials should be sent to your assessment manager and any referral agency.

Appendix I: SARA Code

4.1 Concurrence environmentally relevant activities state code

Response column key:

☒ Achieved
 P/S Performance solution
 N/A Not applicable

Table 4.1.2: All environmentally relevant activities

Performance outcomes	Acceptable outcomes	Response	Comment
Site suitability			
PO1 The choice of the site at which the activity is to be carried out minimises serious environmental harm on areas of high conservation value and special significance, and sensitive land uses at adjacent places.	AO1.1 Areas of high conservation value and special significance likely to be affected by the activity are identified and evaluated, and any adverse effects on these areas are minimised, including edge effects. AND	☒	The activity which is subject to this application does not occur in the vicinity of any high conservation or special significance areas. A Site Based Management Plan has been prepared for this site which accounts for adverse effects which may negatively affect the surrounding environment.
	AO1.2 The activity does not have an adverse effect beyond the site. OR	☒	The Site Based Management Plan prepared for the subject site adequately accounts for potential adverse effects caused by the activity beyond the site.
	AO1.3 Critical design requirements will prevent emissions having an irreversible or widespread impact on adjacent areas.	☒	The Site Based Management Plan prepared for the subject site captures issues surrounding the prevention of emissions which may have an irreversible or widespread impact on adjacent areas.
Location of activity on the site			
PO2 The location for the activity on the site protects all environmental values relevant to adjacent sensitive land uses.	AO2.1 The location of the activity means there will be no adverse effect on any environmental values. OR	☒	The site has been located in an area which is located away from any environmentally sensitive areas. In conjunction with the preparation of a Site Based Management Plan to account for environmental risks associated with the operation, the site's location is considered to ensure that no adverse effects on environmental values will be incurred.
	AO2.2 Both of the following apply: (1) The activity and components of the activity are located on the site in a way that prevents or minimises adverse effects on the use of adjacent land and allows for effective management of the environmental impacts of the activity. (2) Areas used for storing environmentally hazardous materials in bulk are located to take into consideration the likelihood of flooding.	N/A	
Critical design requirements			
PO3 The design of the facility at which the activity is to be carried out permits the activity to be carried out in accordance with best practice	AO3.1 The activity does not involve the storage, production, treatment or release of hazardous contaminants, or involve a regulated structure. OR	N/A	

Performance outcomes	Acceptable outcomes	Response	Comment
environmental management.	AO3.2 Development ensures that– (1) All storage provided for hazardous contaminants includes secondary containment to prevent or minimise releases to the environment from spillage or leaks. (2) Regulated structures must comply with the <i>Manual for assessing hazard categories and hydraulic performance of dams</i> , Department of Environment and Heritage Protection, 2012. (3) Containers are provided for the storage of hazardous contaminants and are secured to prevent the removal of the containers from the site by a flood event. (4) The design of the facility– (a) prevents or minimises the production of hazardous contaminants and waste, or (b) contains and treats hazardous contaminants, rather than releasing them.		Points relevant to the operation are addressed below. Those not addressed are to be assumed to be not applicable to the site operation. The Site Based Management Plan for this operation ensures that: • All storage provided for hazardous contaminants includes secondary containment to prevent or minimise releases to the environment from spillage or leaks. • Containers are provided for the storage of hazardous contaminants and are secured to prevent the removal of the containers from the site by a flood event. • The design of the facility– - prevents or minimises the production of hazardous contaminants and waste, or - contains and treats hazardous contaminants, rather than releasing them.
Standard criteria			
PO4 The design of the activity demonstrates consideration of the standard criteria. Editor's note: It is recommended that the development application should address how it has considered the standard criteria.	No acceptable outcome is prescribed.		Prior to the preparation of the Site Based Management Plan for this activity, the standard criteria were considered and incorporated into the design of the activity. More information is available in the Site Based Management Plan.
PO5 The activity avoids adverse impacts on matters of national environmental significance and matters of state environmental significance or, where this is not reasonably possible, impacts are minimised and residual impacts are offset.	AO5.1 Matters of national environmental significance and matters of state environmental significance likely to be affected by the activity are identified and evaluated, and any adverse effects on the matters of national environmental significance of matters of state environmental significance are avoided or, where this cannot be reasonably achieved, impacts are minimised and any residual impacts are offset.		No matters of national environmental significant or matters of state environmental significance were identified as occurring on or near the subject area proposed for the activity. As a result, impacts to these are not anticipated and therefore not required to be ameliorated or offset.

8.2 Brigalow Belt and New England Tablelands bioregion state code

Response column key:

- ☒ Achieved
- P/S Performance solution
- N/A Not applicable

Table 8.2.3: General

Performance outcomes	Acceptable outcomes	Response	Comment
Clearing to avoid and minimise impacts			
PO1 To regulate the clearing of vegetation in a way that ensures the conservation of regional ecosystems, clearing only occurs where the applicant has demonstrated that the development has first avoided and minimised the impacts of development.	No acceptable outcome is prescribed.	☒	A careful site selection and design process was undertaken for the Project. The location of this offsite infrastructure was selected because it entirely avoided field verified mapped regional ecosystems and only involved works in areas of non-remnant vegetation. The development footprint has been restricted to its smallest practical size to minimise the extent of clearing required to facilitate its creation.
Biodiversity and conservation outcomes			
PO2 Clearing may occur only where the material change of use or reconfiguring a lot can demonstrate that the level of conservation and biodiversity outcomes ensured by the development significantly exceeds the extent and value of the area proposed to be cleared. This can only be achieved by meeting the requirements of Appendix A: Vegetation offset policy.	No acceptable outcome is prescribed.	☒	The current ecological value of the area proposed to be cleared is low. Whilst some 'of concern' remnant vegetation is mapped as occurring within the footprint of the subject site, ground-truthing exercises have indicated that this mapping is incorrect. As a result, all clearing which needs to occur to facilitate construction of this facility occurs in non-remnant vegetation. Consequently, weed management and removal associated with the clearing is considered to exceed and improve upon the current ecological state of the site as a result of the clearing works.

Table 8.2.7: Coordinated projects

Performance outcomes	Acceptable outcomes	Response	Comment
Limits to clearing			
PO1 To regulate the clearing of vegetation in a way that conserves remnant vegetation that are regional ecosystems, does not cause land degradation, prevents the loss of biodiversity and maintains ecological processes, subject to the limitations required to meet PO2–PO10, clearing is limited to the extent that is necessary for the project, any associated ancillary works, and the operation of works that	No acceptable outcome is prescribed.	☒	A careful site selection and design process was undertaken for the Project. The selection process identified the preferred location and alignment of the infrastructure proposed for the Project. The selection process considered economic, social and environmental impacts while aiming to deliver the desired infrastructure outcomes. The proposed route selected avoids vegetation verified in the field as remnant vegetation (particularly of concern and endangered RES), although current incorrect mapping indicates that of concern remnant vegetation occurs within the footprint. This mapping is subject to a PMAV application. The development also

Performance outcomes	Acceptable outcomes	Response	Comment
comprise a project declared to be a coordinated project under the <i>State Development and Public Works Organisation Act 1971</i> , section 26.			avoids areas of high ecological value where possible and the width of linear corridors has been reduced to the absolute minimum width necessary for construction.
Wetlands			
PO2 To regulate the clearing of vegetation in a way that prevents the loss of biodiversity and maintains ecological processes, maintain the current extent of assessable vegetation associated with any natural significant wetland or natural wetland to provide: (1) water quality by filtering sediments, nutrients and other pollutants (2) aquatic habitat (3) terrestrial habitat.	AO2.1 Clearing does not occur: (1) in any natural wetland (2) within 100 metres from any natural wetland (3) in any natural significant wetland (4) within 200 metres from any natural significant wetland.	☒	Clearing is not proposed to occur within, or in any vicinity closer to 200 metres to a natural significant wetland. Nonetheless, erosion and sediment control devices will be installed prior to clearing.
Watercourses			
PO3 To regulate the clearing of vegetation in a way that does not cause land degradation, prevents the loss of biodiversity and maintains ecological processes, maintain the current extent of assessable vegetation associated with any watercourse to provide: (1) bank stability by protecting against bank erosion (2) water quality by filtering sediments, nutrients and other pollutants (3) aquatic habitat (4) terrestrial habitat.	AO3.1 Clearing does not occur: (1) in any watercourse (2) within the relevant distance stipulated in Table 2 of each high bank of each watercourse.	☒	Clearing is not proposed to occur within, or in any vicinity to a watercourse.
Connectivity			
PO4 To regulate the clearing of vegetation in a way that prevents the loss of biodiversity and maintains ecological processes, areas of mapped remnant vegetation are: (1) of sufficient size and configured in a way to maintain ecosystem functioning (2) of sufficient size and configured in a	AO4.1 Where clearing is less than: (1) 10 metres wide in the coastal subregions of the Brigalow Belt bioregion (2) 2 hectares in the coastal subregions of the Brigalow Belt bioregion (3) 25 metres wide in the non-coastal subregions of the Brigalow Belt and New England Tableland bioregion, or (4) 5 hectares in the non-coastal subregions of the	☒	Clearing is not proposed to occur within any field verified areas of mapped remnant vegetation. All clearing will occur within areas mapped as non-remnant vegetation.

Performance outcomes	Acceptable outcomes	Response	Comment
way to remain in the landscape in spite of any threatening processes (3) located on the lot(s) that are the subject of the application to maintain connectivity to mapped remnant vegetation on adjacent properties.	Brigalow Belt and the New England Tableland bioregion clearing does not: (a) reduce the width of mapped remnant vegetation to less than 200 metres (b) occur where the width of mapped remnant vegetation is less than 200 metres. AND		
	AO4.2 Clearing does not: (1) reduce areas of contiguous mapped remnant vegetation to less than 10 hectares in the coastal subregions of the Brigalow Belt bioregion (2) occur in areas of contiguous mapped remnant vegetation that are less than 10 hectares in the coastal subregions of the Brigalow Belt Bioregion (3) reduce areas of contiguous mapped remnant vegetation to less than 50 hectares in the non-coastal subregions of the Brigalow Belt and New England Tableland bioregion (4) occur in areas of contiguous mapped remnant vegetation that are less than 50 hectares in the non-coastal subregions of the Brigalow Belt and New England Tableland bioregion (5) reduce the width of mapped remnant vegetation to less than 200 metres (6) occur where the width of mapped remnant vegetation is less than 200 metres (7) reduce the total extent of mapped remnant vegetation to less than 30 per cent of the area of the lot(s) that are the subject of the application (8) occur where the total extent of mapped remnant vegetation is less than 30 per cent of the area of the lot(s) that are the subject of the application. AND	☒	Clearing is not proposed to occur within any field verified areas of mapped remnant vegetation. All clearing will occur within areas mapped as non-remnant vegetation.
	AO4.3 Where clearing is for a significant community project, maintain the current extent of mapped remnant vegetation where the vegetation is: (1) of sufficient size and configured in a way to maintain ecosystem functioning (2) of sufficient size and configured in a way to remain in the landscape in spite of any threatening processes	☒	Clearing is not proposed to occur within any field verified areas of mapped remnant vegetation. All clearing will occur within areas mapped as non-remnant vegetation.

Performance outcomes	Acceptable outcomes	Response	Comment
	(3) located on the lot(s) that are the subject of the application to maintain connectivity to mapped remnant vegetation on adjacent properties.		
Soil erosion			
PO5 To regulate the clearing of vegetation in a way that does not cause land degradation and maintains ecological processes, the effect of clearing does not result in: (1) mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion or scalding (2) any associated loss of chemical, physical or biological fertility, including, but not limited to water holding capacity, soil structure, organic matter, soil biology and nutrients within or outside the lot(s) that are the subject of the application.	AO5.1 Mechanical clearing only occurs on: (1) very stable soils on a slope less than 15 per cent (2) stable soils on a slope less than 12 per cent (3) unstable soils on a slope less than 8 per cent (4) very unstable soils on a slope less than 5 per cent.	☒	The entire site on which the development is proposed is very flat. All clearing will occur on slopes which are less than 5 per cent.
Salinity			
PO6 To regulate the clearing of vegetation in a way that does not cause land degradation and maintains ecological processes, clearing does not contribute to: (1) waterlogging, or (2) the salinisation of groundwater, surface water or soil.	AO6.1 Where clearing is less than: (1) 2 hectares, or (2) 10 metres wide clearing does not occur in any discharge area. AND	☒	The clearing is not proposed in any discharge area.
	AO6.2 Where clearing is less than: (1) 5 hectares, or (2) 50 metres wide clearing does not occur: (a) in any discharge area, or (b) within 200 metres of any discharge area. AND	☒	The clearing is not proposed in any discharge area or within 200 metres of a discharge area.
	AO6.3 Clearing does not occur in areas greater than 5 hectares	☒	Clearing will occur in areas of greater than 5 hectares but no remnant vegetation will be affected by the proposed development.

Performance outcomes	Acceptable outcomes	Response	Comment
Conserving remnant vegetation that are endangered regional ecosystems and of concern regional ecosystems			
PO7 To regulate the clearing of vegetation in a way that conserves remnant vegetation that are endangered regional ecosystems and of concern regional ecosystems, maintain the current extent of endangered regional ecosystems and of concern regional ecosystems.	AO7.1 Clearing: (1) does not occur in an endangered regional ecosystem or an of concern regional ecosystem that is listed in Table 4 (2) in an endangered regional ecosystem or an of concern regional ecosystem that is not listed in Table 4, only occurs where the clearing is less than 10 metres wide or 0.5 hectares.	☒	Clearing will not occur in an endangered or of concern regional ecosystem.
Essential habitat			
PO8 To regulate the clearing of vegetation in a way that prevents the loss of biodiversity, maintain the current extent of essential habitat.	AO8.1 Clearing does not occur in an area shown as essential habitat on the essential habitat map.	☒	Clearing will not occur in an area shown as essential habitat on the essential habitat map.
Conservation status thresholds			
PO9 To regulate the clearing of vegetation in a way that conserves remnant vegetation that are regional ecosystems and prevents the loss of biodiversity, maintain the current extent of regional ecosystems listed in Table 5.	AO9.1 Clearing in a regional ecosystem listed in Table 5 does not occur unless the clearing is less than: (1) 10 metres wide, or (2) 2 hectares.	☒	Clearing will not occur in a regional ecosystem listed in Table 5.
Acid sulfate soils			
PO10 To regulate the clearing of vegetation in a way that does not cause land degradation and maintains ecological processes in the coastal subregions of the Brigalow Belt bioregion, and the Marlborough Plains subregion, clearing activities do not result in disturbance of acid sulfate soils or changes to the hydrology of the location that will either: (1) aerate horizons containing iron sulfides, or (2) mobilise acid or metals.	AO10.1 In the coastal subregions of the Brigalow Belt bioregion, and the Marlborough Plains subregion, clearing in land zone 1, land zone 2 or land zone 3 in areas below 5 metre Australian height datum follows management principles in accordance with the <i>Queensland acid sulfate soil technical manual: Soil management guidelines</i> , Department of Natural Resources and Mines, 2002.	☒	The proposed clearance areas are not located in the coastal subregions of the Brigalow Belt bioregion or Marlborough Plains subregion. Therefore, it is considered that Acid Sulfate Soils will not represent a significant issue for this project.

19.3 Transport infrastructure and network design state code

Response column key:

- ☒ Achieved
- P/S Performance solution
- N/A Not applicable

Table 19.3.1: All development

Performance outcomes	Acceptable outcomes	Response	Comment
All state transport infrastructure – except state-controlled roads			
PO1 Development does not compromise the safe and efficient management or operation of state transport infrastructure or transport networks.	AO1.1 Any impact from the development on the safe and efficient management and operation of the state transport corridor or transport network is identified and mitigated. Editor's note: A traffic impact assessment will assist in addressing this acceptable outcome. A traffic impact assessment should identify any upgrade works required to mitigate impacts on the safe and efficient management and operation of the state transport corridor.	☒	The proposed development is located a significant distance away from the state controlled transport infrastructure in the state transport corridor, and will therefore not prejudice any planned upgrades of same..
PO2 Development does not compromise planned upgrades to state transport infrastructure or the development of future state transport infrastructure in future state transport corridors.	AO2.1 Written advice has been provided by DTMR that there are no planned upgrades of state transport infrastructure or future state transport corridors which will be compromised by the development. OR both of the following acceptable outcomes apply	N/A	
	AO2.2 The layout and design of the proposed development accommodates planned upgrades to adjacent state transport infrastructure in the state transport corridor. AND	☒	The proposed development is located a significant distance away from the state controlled transport infrastructure in the state transport corridor, and will therefore not prejudice any planned upgrades of same.
	AO2.3 The layout and design of the development does not compromise the delivery of state transport infrastructure in future state transport corridors. Editor's note: A traffic impact assessment will assist in addressing this acceptable outcome.	☒	The proposed development is located a significant distance away from the state controlled transport infrastructure and any future state transport corridor, and will therefore not prejudice any planned upgrades of same.
State-controlled roads			
PO3 Development does not compromise the safe and efficient management or operation of state-controlled roads. Editor's note: A traffic impact assessment will assist in addressing this performance outcome.	A03.1 Any impact from the development on the safe and efficient management and operation of the state-controlled road is identified and mitigated. Editor's note: A traffic impact assessment will assist in addressing this acceptable outcome.	☒	The potential impacts from the proposed development have been assessed as both a stand-alone development, and also in the context of the broader Carmichael Coal Mine and Rail Project. None of the identified potential impacts are of a scale which would compromise planned state road upgrades or delivery.

Performance outcomes	Acceptable outcomes	Response	Comment
			Brown Consulting have completed the ' <i>Carmichael Coal Mine add Rail Project – Traffic Impact Assessment</i> ' which addresses the impact of the Project on State Controlled Roads. This report is included in the SEIS documentation
PO4 Development does not compromise planned upgrades of the state-controlled road network or delivery of future state-controlled roads.	AO4.1 Written advice has been provided by DTMR that there are no planned upgrades of state-controlled roads or future state-controlled roads which will be compromised by the development. OR	N/A	
	AO4.2 Any impact from the development does not compromise planned upgrades of the state-controlled road network or the delivery of future state-controlled roads. Editor's note: A traffic impact assessment will assist in addressing this acceptable outcome.	☒	The potential impacts from the proposed development have been assessed as both a stand-alone development, and also in the context of the broader Carmichael Coal Mine and Rail Project. None of the identified potential impacts are of a scale which would compromise planned state road upgrades or delivery. Brown Consulting have completed the ' <i>Carmichael Coal Mine add Rail Project – Traffic Impact Assessment</i> ' which addresses the impact of the Project on State Controlled Roads. This report is included in the SEIS documentation
PO5 Upgrade works on or associated with the state-controlled road network are undertaken in accordance with applicable standards.	AO5.1 Upgrade works for the development are consistent with the requirements of the <i>Road planning and design manual – interim guide to road planning and design practice</i> , Department of Transport and Main Roads, 2010. AND	☒	Brown Consulting have completed the ' <i>Carmichael Coal Mine add Rail Project – Traffic Impact Assessment</i> ' which addresses the impact of the Project on State Controlled Roads. This report is included in the SEIS documentation
	AO5.2 The design and staging of upgrade works on or associated with the state-controlled road network are consistent with planned upgrades.	☒	Brown Consulting have completed the ' <i>Carmichael Coal Mine add Rail Project – Traffic Impact Assessment</i> ' which addresses the impact of the Project on State Controlled Roads. This report is included in the SEIS documentation
PO6 Development does not impose traffic loadings on the state-controlled road network which could be accommodated on the local road network.	AO6.1 New roads proposed as part of the development are consistent with the road hierarchy adopted by the relevant local government, and new lower order roads do not connect directly to a state-controlled road. AND	N/A	No new public roads are proposed as part of this development application.

Performance outcomes	Acceptable outcomes	Response	Comment
	AO6.2 Where the opportunity is available, development provides for road access locations to lower order roads. AND	☒	Proposed new private access roads will intersect with Moray-Carmichael Road, a local government controlled road. Brown Consulting have completed the '<i>Carmichael Coal Mine add Rail Project – Traffic Impact Assessment</i>' which addresses the impact of the Project on State Controlled Roads. This report is included in the SEIS documentation
	AO6.3 Where possible, the layout and design of the development encourages traffic generated by the development to use lower order roads.	☒	Proposed new private access roads will intersect with Moray-Carmichael Road, a local government controlled road. Brown Consulting have completed the '<i>Carmichael Coal Mine add Rail Project – Traffic Impact Assessment</i>' which addresses the impact of the Project on State Controlled Roads. This report is included in the SEIS documentation