

CAMEBY DOWNS MINE CONTINUED OPERATIONS PROJECT

SECTION 226 CONSIDERATION REPORT



NOVEMBER 2016  
Project No. SYN-16-02  
Document No. 00809406

## TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1	INTRODUCTION	1
1.1	PURPOSE AND STRUCTURE OF THIS DOCUMENT	1
1.2	EXISTING CAMEBY DOWNS MINE	2
1.3	PROJECT OVERVIEW	4
1.4	PROPONENT	4
2	LOCATION AND MINING TENEMENTS	7
3	ENVIRONMENTAL VALUES	10
3.1	LAND	10
3.2	WATER	11
3.3	BIODIVERSITY	12
3.3.1	Ecosystems	12
3.3.2	Flora and Fauna Species	15
3.3.3	Relevant Environmental Values	15
3.4	CLIMATE, AIR AND NOISE	16
3.5	SOCIO-ECONOMIC	18
3.6	CULTURAL HERITAGE	18
4	PROJECT DESCRIPTION	19
4.1	GEOLOGY AND COAL RESOURCE	19
4.2	CONSTRUCTION ACTIVITIES	19
4.3	MINING OPERATIONS	21
4.3.1	Open Cut Extents	21
4.3.2	Open Cut Mining	21
4.4	COAL PROCESSING, HANDLING AND TRANSPORT	22
4.5	WATER SUPPLY AND MANAGEMENT	22
4.6	CONSTRUCTION OF LOCAL ROADS	24
4.7	WASTE MANAGEMENT	26
4.7.1	Waste Rock and CHPP Rejects Management	26
4.7.2	Other Waste Management	26
4.8	REHABILITATION AND POST-MINING LAND USE	27
4.8.1	Rehabilitation Hierarchy	27
4.8.2	Rehabilitation Goals	28
4.8.3	Progressive Rehabilitation	28
4.8.4	Post-mining Land Use	28
4.8.5	Rehabilitation of Mining Domains	29
4.8.6	Rehabilitation Management Plan	30
4.9	EMPLOYMENT AND COMMUNITY	30
5	PLANNING CONSIDERATIONS	31
5.1	APPLICABILITY OF PART 7, CHAPTER 5 OF ENVIRONMENTAL PROTECTION ACT 1994	31
5.2	ENVIRONMENTAL IMPACT STATEMENT TRIGGERS	33
5.3	RELEVANT LEGISLATION AND POLICY REQUIREMENTS	33
5.3.1	Environment Protection and Biodiversity Conservation Act 1999	35
5.3.2	Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy	36
5.3.3	National Greenhouse and Energy Reporting Act 2007	36

**TABLE OF CONTENTS (continued)**

5.3.4	Native Title Act 1993	36
5.3.5	Environmental Protection Act 1994	36
5.3.6	Environmental Protection Regulation 2008	37
5.3.7	Environmental Protection (Noise) Policy 2008	37
5.3.8	Environmental Protection (Air) Policy 2008	37
5.3.9	Environmental Protection (Water) Policy 2009	38
5.3.10	Waste Reduction and Recycling Act 2011	38
5.3.11	Vegetation Management Act 1999	39
5.3.12	Nature Conservation Act 1992	39
5.3.13	Water Act 2000	40
5.3.14	Fisheries Act 1994	40
5.3.15	Aboriginal and Cultural Heritage Act 2003	40
5.3.16	Sustainable Planning Act 2009	41
5.3.17	Mineral Resources Act 1989	41
5.3.18	Transport Infrastructure Act 1994	42
5.3.19	Queensland Heritage Act 1992	42
5.3.20	Environmental Offsets Policy 2014 V1.1	42
5.3.21	Land Protection (Pest and Stock Route Management) Act 2002	43
5.3.22	Regional Planning Interests Act 2014	43
5.3.23	Other Potentially Relevant Legislation and Policy	43
5.4	REQUIRED APPROVALS	44
5.5	PLANNING PROCESSES AND STANDARDS	44
6	SCOPE OF ENVIRONMENTAL ASSESSMENT	47
6.1	PRELIMINARY RISK ASSESSMENT	47
6.2	LAND	48
6.2.1	Potential Impacts and Management Measures	48
6.2.2	Environmental Assessment	48
6.3	WATER	49
6.3.1	Potential Impacts and Management Measures	49
6.3.2	Environmental Assessment	50
6.4	BIODIVERSITY	51
6.4.1	Potential Impacts and Management Measures	51
6.4.2	Environmental Assessment	51
6.5	AIR QUALITY	52
6.5.1	Potential Impacts and Management Measures	52
6.5.2	Environmental Assessment	53
6.6	NOISE AND VIBRATION	54
6.6.1	Potential Impacts and Management Measures	54
6.6.2	Environmental Assessment	55
6.7	OTHER CONSIDERATIONS	55
6.7.1	Socio-economic	55
6.7.2	Cultural Heritage	56
6.7.3	Visual Amenity	57
6.7.4	Road Transport	57
6.7.5	Waste Management	57
6.7.6	Geochemistry	58
6.7.7	Hazards and Safety	59
7	ENVIRONMENTALLY RELEVANT ACTIVITIES AND NOTIFIABLE ACTIVITIES	62
7.1	ENVIRONMENTALLY RELEVANT ACTIVITIES	62

**TABLE OF CONTENTS (continued)**

	7.2	NOTIFIABLE ACTIVITIES	63
8		STAKEHOLDER ENGAGEMENT	64
	8.1	COMMUNITY REFERENCE GROUP	64
	8.2	COMMUNITY ENGAGEMENT	64
	8.3	GENERAL COMMUNICATION	64
9		REFERENCES	66

**LIST OF TABLES**

Table 2-1	Projects Tenements
Table 2-2	Overlapping Petroleum Tenements
Table 3-1	Vegetation Communities Occurring within the Project Area
Table 3-2	Threatened Ecological Communities Predicted to Occur within a Search Area Surrounding the Project Area
Table 3-3	Threatened Fauna Recorded within the Project Area
Table 4-1	Non-mining Waste Streams Generated by the Project
Table 5-1	EP Act Section 226 – Requirements for Amendment Application Generally
Table 5-2	EP Act Section 223 – Minor Amendment Criteria
Table 5-3	Mining Projects – Triggers for Brownfield Sites (Amendment Applications)
Table 5-4	Key Commonwealth and State Legislation and Policy Relevant to the Project
Table 5-5	Other Potentially Relevant Commonwealth and Queensland Legislation
Table 5-6	Key Project Approvals
Table 6-1	Air Quality Objectives Relevant to the Project
Table 6-2	Summary of Project Impacts to Non-Indigenous Cultural Heritage Sites
Table 7-1	Resource Activity and the Aggregate Environmental Score
Table 7-2	Prescribed ERAs Associated with the Project

**LIST OF FIGURES**

Figure 1	Regional Location
Figure 2	Project Area
Figure 3	Project General Arrangement
Figure 4	Property Ownership
Figure 5	Remnant Vegetation Communities within the Project Area
Figure 6	Juandah Coal Measures Representative Stratigraphic Column
Figure 7	Road Closure Map

**LIST OF CHARTS**

Chart 1	Average Monthly Precipitation for the Miles Post Office Meteorological Station
---------	--

## 1 INTRODUCTION

This report has been prepared by Yancoal Australia Ltd (Yancoal) to support an Environmental Authority (EA) amendment application for the Cameby Downs Mine Continued Operations Project (the Project). The Project involves the extension of operations within Mining Lease (ML) 50233 and into Mining Lease Applications (MLAs) 50258, 50259, 50260 and 50269, at an increased mining rate of 3.5 million tonnes per annum (Mtpa).

### 1.1 PURPOSE AND STRUCTURE OF THIS DOCUMENT

This report has been prepared to address the requirements of Section 226 of the *Environmental Protection Act 1994* (EP Act), and in reference to the existing EA (EPML00900113) and current Plan of Operations. This report describes the proposed amendment, the land to be affected, the potential impacts of the proposal on environmental values and a description of the proposed measures for minimising and managing the potential impacts.

Environmental values have been identified, with reference to environmental assessments conducted for previous expansion projects at the Cameby Downs Mine, and an assessment of the likely environment impacts associated with the Project. Where impacts on environmental values are expected, a description of the environmental assessment to be conducted is provided, and descriptions of the management practices proposed to prevent or minimise adverse impacts have been provided.

The Project is described in detail, providing proposed control measures for any required changes to management plans such as water management, noise management and waste management.

It is anticipated that the Department of Environment and Heritage Protection (DEHP) will use the information presented in this document to:

- Make an assessment level decision in accordance with Section 228 of the EP Act.
- Decide whether to issue a “Decision to require a substituted way to give and publish the application notice”.
- Decide whether to give an Information Request in accordance with Section 140 of the EP Act to request further information required to assess the EA amendment application. That consideration will include whether an Environmental Impact Statement (EIS) is required for the Project under Section 143 of the EP Act.

The remainder of this document is structured as follows:

- Section 1 Introduction – provides a background to the Cameby Downs Mine and an overview of the proposed Project activities.
- Section 2 Location and Mining Tenements – describes the location of the Cameby Downs Mine and relevant mining tenements.
- Section 3 Environmental Values – identifies the environmental values relevant to the Project.
- Section 4 Project Description – provides a description of the Project and the types of activities that will be undertaken.
- Section 5 Planning Considerations – describes the applicable statutory planning instruments and identifies where the requirements of Section 226 of the EP Act are addressed.

- Section 6    Scope of Environmental Assessment – identifies key environmental risks of particular relevance to the Project, provides an analysis of the likely nature and extent of potential impacts, and identifies the scope of environmental assessments to be conducted by Syntech Resources Pty Ltd (Syntech) for the Project.
- Section 7    Environmentally Relevant Activities – identifies the environmentally relevant activities (ERAs) to be conducted as part of the Project.
- Section 8    Stakeholder Engagement – outlines consultation already undertaken and proposed to be carried out for the Project.
- Section 9    References – lists documents referenced in Sections 1 to 8.

## **1.2        EXISTING CAMEBY DOWNS MINE**

The Cameby Downs Mine is owned and operated by Syntech and is managed by Yancoal. The mine is located within ML 50233, which covers approximately 2,722 hectares (ha), and is located approximately 360 kilometres (km) west-north-west of Brisbane in the Western Downs Regional Council local government area. The regional location of the Project is shown on Figure 1.

The Cameby Downs Mine has been operating for six years, with excavation of overburden commencing in July 2010 and first coal excavated in August of that year. The coal handling and preparation plant (CHPP) was commissioned in November 2010 with first railing of coal occurring in December 2010.

The Cameby Downs Mine operates under EA EPML00900113 (mining black coal and mineral processing activities) and involves operation of an open cut coal mine, CHPP and rail load-out infrastructure. The mine is currently approved to extract up to 2.8 Mtpa of run-of-mine (ROM) coal over a mine life of approximately 45 years. After processing, the volume of product (thermal) coal is approximately 2.2 Mtpa. Product coal is loaded onto trains within ML 50233, and transported to the Port of Brisbane.

The Cameby Downs Mine employs a total workforce of approximately 140 persons and is approved to operate 24 hours per day, 5 to 7 days per week dependent on operations.

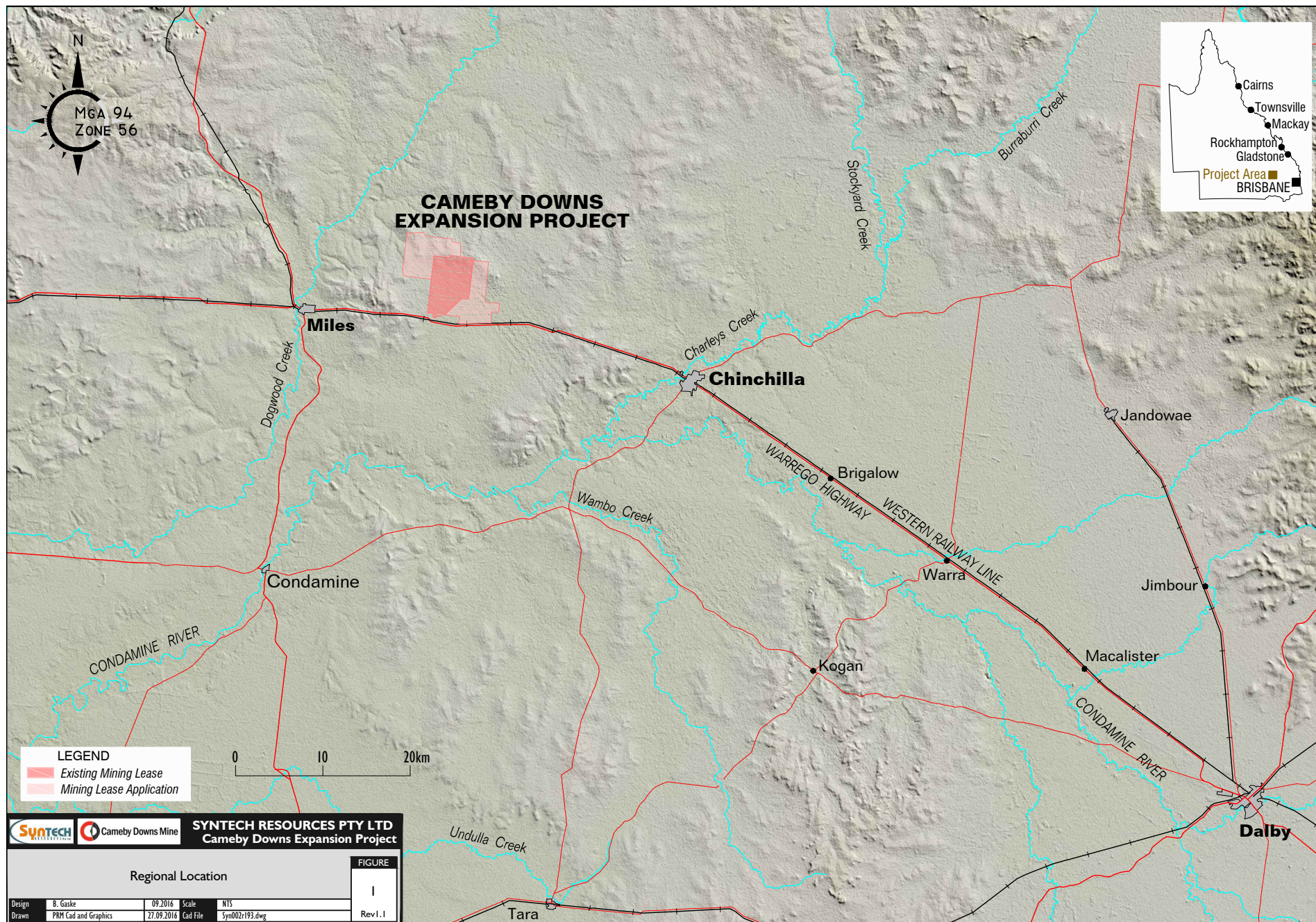
The Cameby Downs Mine changed from a contractor operation to owner-operator operation in December 2013, with the procurement of new mining fleet which resulted in improved productivity and noise attenuated equipment. Through improved operating efficiencies and strategies in mining and processing operations increased production rates have been achieved.

In addition to the Cameby Downs Mine, the other existing mine in the region is Kogan Creek (CS Energy Limited).

The Surat Basin is the target area for several proposed mining operations, currently under application or recently approved and awaiting construction. These include the Wandoan Coal Project (Glencore), the Elimatta Project (Taroom Coal Pty Ltd), the Range Project (Stanmore Coal Limited) and the Columboola Project (Metro Mining Limited).

The region is also a rich target area for coal seam gas, with numerous operations in existence or under application, including the development of a number of gas wells within and surrounding ML 50233. Development of related infrastructure such as the Surat to Gladstone Pipeline (Surat Gladstone Pipeline Pty Ltd) has been approved.





### 1.3 PROJECT OVERVIEW

The Project involves extension of operations within ML 50233 and into MLAs 50258, 50259, 50260 and 50269, at an increased mining rate of 3.5 Mtpa, for a period of approximately 70 years from 2016 (Figure 2). The target resource for the Project has been estimated at approximately 230 million tonnes of proven and probable *in-situ* thermal coal reserves.

Major elements of the Project include:

- increase in the life of the Cameby Downs Mine from 45 years to 70 years at an increased mining rate of 3.5 Mtpa ROM;
- processing of ROM coal in the existing CHPP;
- the disposal of CHPP waste material in dedicated out-of-pit rejects dams and, in later years, the mined-out voids;
- the disposal of spoil, comprising of overburden and interburden, in out-of-pit and in-pit dumps;
- rail loading and transport of product coal via the existing rail system from the Cameby Downs Mine to the Port of Brisbane;
- the continuation of mining operations on a 24 hour, 7 days per week basis with a drive-in/drive-out workforce of up to approximately 160 personnel during the life of the Project;
- construction and use of water management infrastructure (including diversion of drainage features);
- ongoing exploration activities within ML 50233 and MLAs 50258, 50259, 50260 and 50269; and
- progressive rehabilitation, as well as ultimate rehabilitation of the entire Project area once the site has been decommissioned.

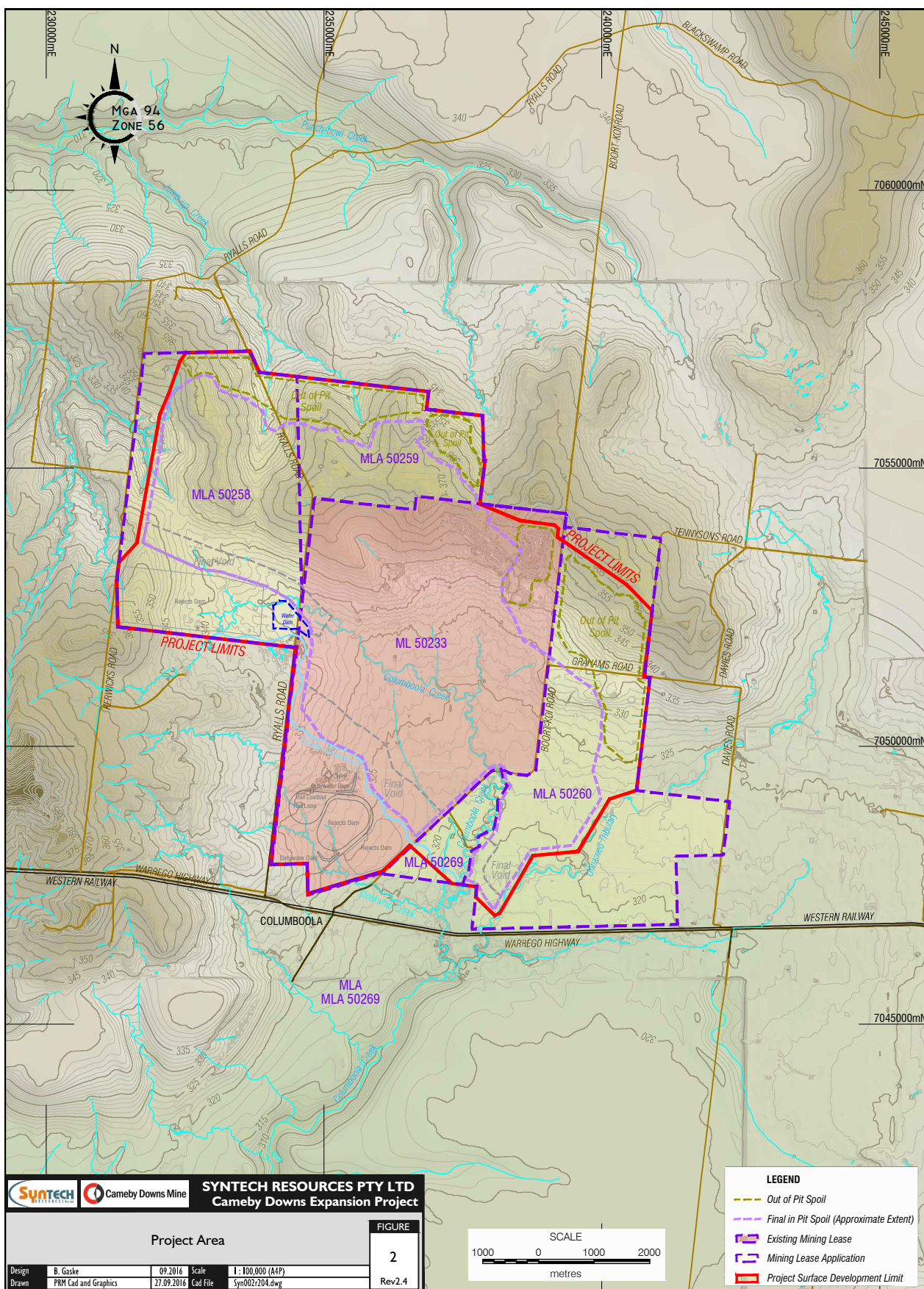
The approximate extents of the Project open cut mining components (including open cut pits, spoil emplacement, rejects dams and final voids) are shown on Figure 3.

### 1.4 PROPONENT

The proponent is Syntech Resources Pty Ltd (ACN 095 102 971). The registered address for the proponent is:

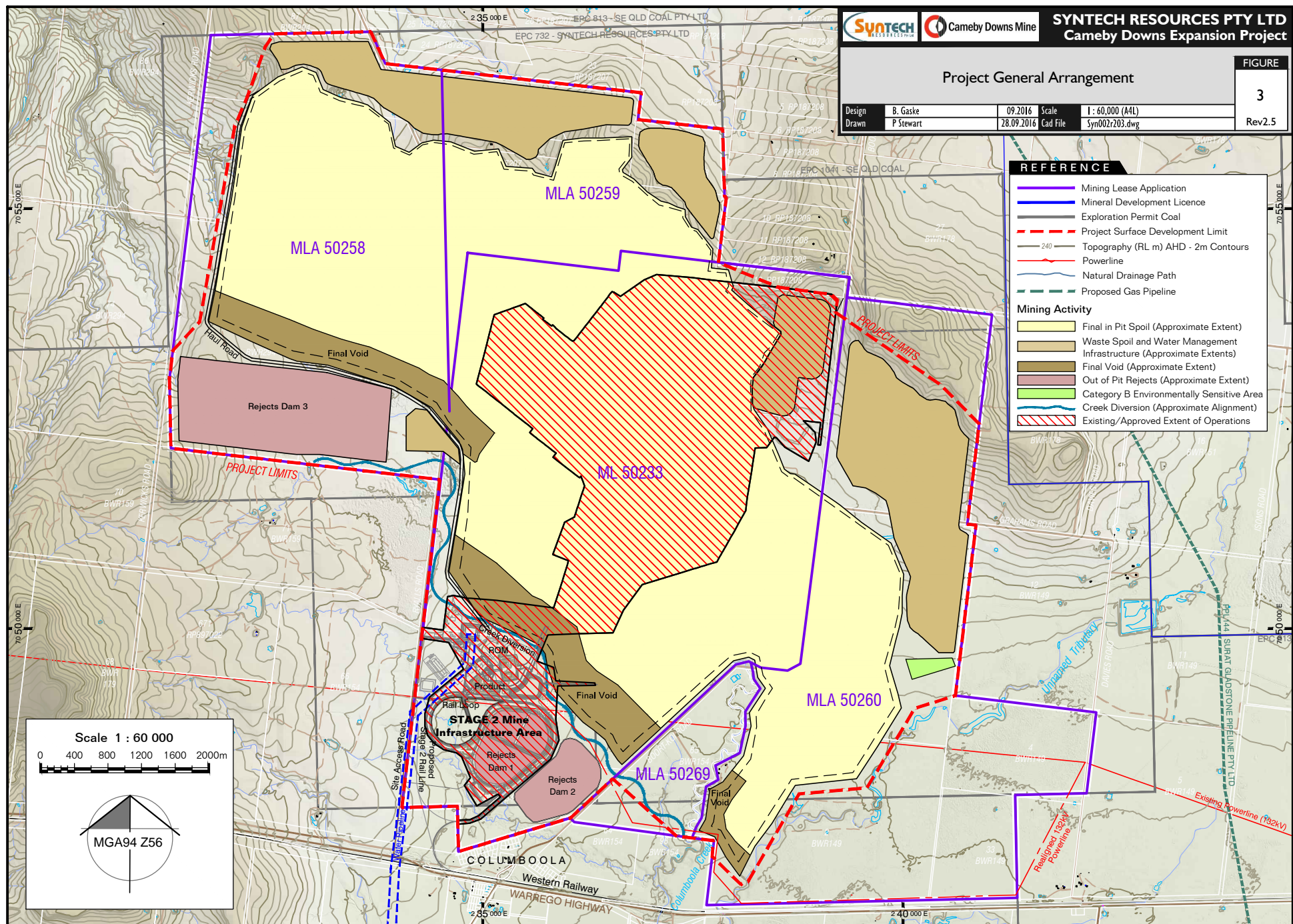
Level 26  
363 George Street  
SYDNEY NSW 2000







Project General Arrangement					FIGURE
					3
Design	B. Gaske	09.2016	Scale	1 : 60,000 (A4L)	Rev2.5
Drawn	P Stewart	28.09.2016	Cad File	Syn002r203.dwg	



## 2 LOCATION AND MINING TENEMENTS

The Project is located within the southern Surat Basin, approximately 360 km west-north-west of Brisbane, in the Western Downs Regional Council local government area.

Figure 4 shows the current ownership of surrounding properties. Syntech owns all land within ML 50233, and a number of lots within MLAs 50258, 50259, 50260 and 50269. The remaining lots are a combination of private ownership and Local Government road easements.

There are seven privately-owned lots within MLAs 50258, 50259, 50260 and 50269. Syntech is currently engaged with the owners of these properties with respect to compensation/purchase agreements.

The Project will be located within ML 50233 and MLAs 50258, 50259, 50260 and 50269. An Initial Development Plan for MLAs 50258, 50259, 50260 and 50269 has been approved by the Department of Natural Resources and Mines (DNRM). It is proposed that parts of MLAs 50258, 50259 and 50260 described in the Initial Development Plan be abandoned under Section 307 of the *Mineral Resources Act 1989* (MR Act) as shown in Figure 3.

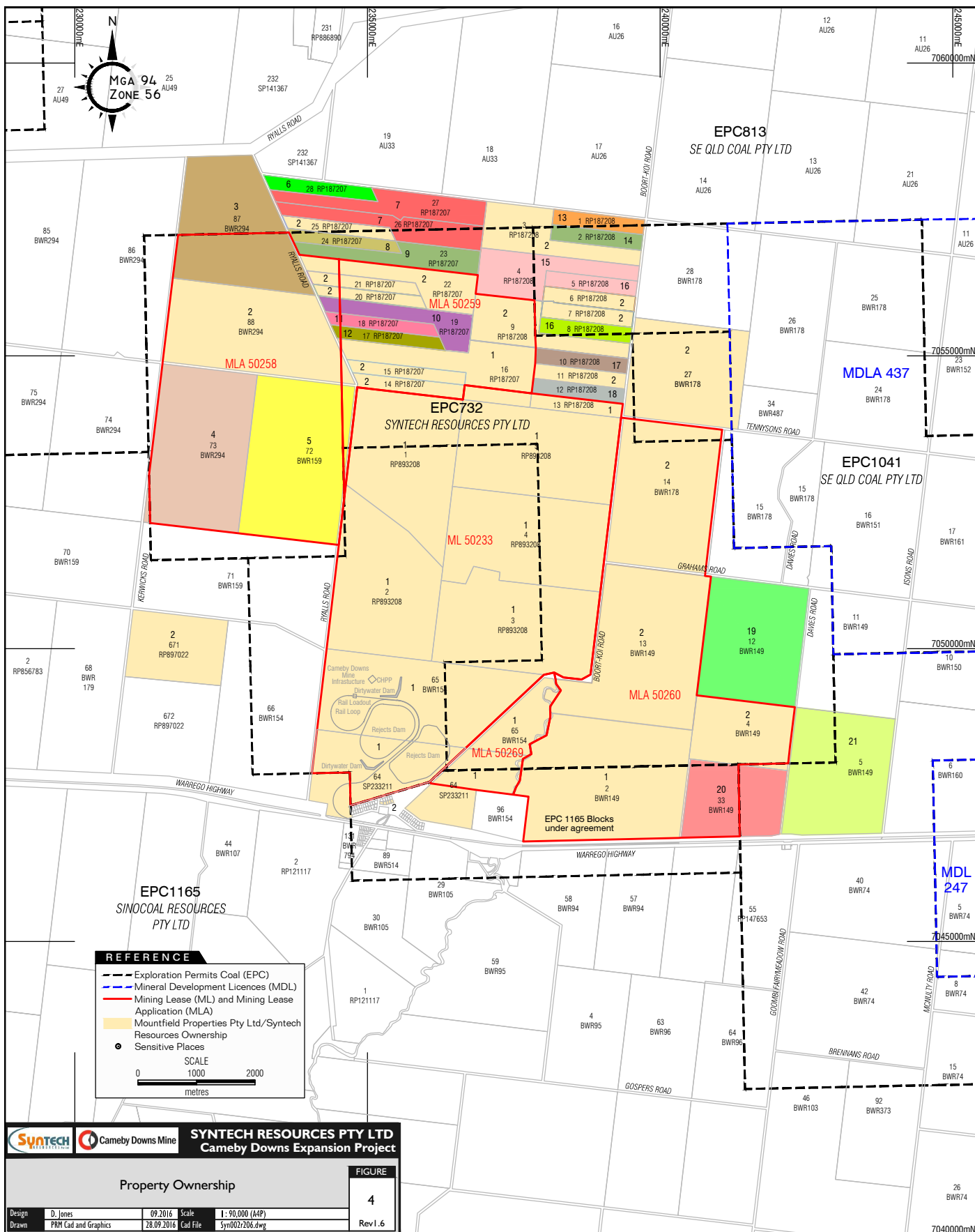
Table 2-1 identifies the Project tenements and their status, and identifies overlapping Exploration Permit for Coal (EPC) tenures held by others.

**Table 2-1**  
**Projects Tenements**

Tenure Number	Status	Date Lodged	Date Granted	Date Expires	Overlap Mining Tenure	Holder of Overlapping Mining Tenure
ML 50233	Granted	08/06/07	31/07/08	31/07/38	Nil	-
MLA 50258	Application	16/11/09	-	-	Nil	-
MLA 50259	Application	16/11/09	-	-	Nil	-
MLA 50260	Application	16/11/09	-	-	EPC 1165	Metrocoal Limited (49 percent [%]) Sino Coal Resources Pty Ltd (51%)
MLA 50269	Application	16/11/09	-	-	EPC 1165	Metrocoal Limited (49%) Sino Coal Resources Pty Ltd (51%)

Syntech has an agreement in place with Metro Mining Limited and Sino Coal Resources for the overlapping EPC tenements.

In addition to overlapping mining tenures, the Cameby Downs Mine tenements also share overlapping petroleum tenements. Queensland Gas Company (QGC) has developed 25 coal seam gas wells within ML 50233. Table 2-2 shows the petroleum tenements that overlap the Project area. A co-development agreement with BG International Pty Ltd and QGC has already been executed and another is to be developed with Arrow Energy in respect of the overlap within MLA 50258 and our existing ML 50233.





**Table 2-2**  
**Overlapping Petroleum Tenements**

<b>Mining Lease</b>	<b>Overlapping Petroleum Tenure</b>	<b>Holder of Overlapping Petroleum Tenure</b>
ML 50233	EPP 676 EPP 747 PL 472 (Application)	Australian CBM Pty Ltd Arrow Energy Pty Ltd (70%) and Arrow CSG (Australia) Pty Ltd (30%) BG International (Aus) Pty Ltd (80%) and QGC Pty Ltd (20%)
MLA 50258	EPP 747	Arrow Energy Pty Ltd (70%) and Arrow CSG (Australia) Pty Ltd (30%)
MLA 50259	EPP 676 PL 472 (Application)	Australian CBM Pty Ltd (70 %) and Arrow CSG (Australia) Pty Ltd (30%) BG International (Aus) Pty Ltd (80%) and QGC Pty Ltd (20%)
MLA 50260	EPP 676 PL 472 (Application) PL 458	Australian CBM Pty Ltd (70 %) and Arrow CSG (Australia) Pty Ltd (30%) BG International (Aus) Pty Ltd (80%) and QGC Pty Ltd (20%) BG International (Aus) Pty Ltd (80%) and QGC Pty Ltd (20%)
MLA 50269	EPP 676 PL 472 (Application) PL 458	Australian CBM Pty Ltd (70 %) and Arrow CSG (Australia) Pty Ltd (30%) BG International (Aus) Pty Ltd (80%) and QGC Pty Ltd (20%) BG International (Aus) Pty Ltd (80%) and QGC Pty Ltd (20%)

### 3 ENVIRONMENTAL VALUES

Environmental values are the qualities (e.g. aesthetic, social and cultural values) or physical characteristics of the environment that are conducive to ecological health, public amenity or safety. Sections 3.1 to 3.6 describe the environmental values relevant to the Project.

#### 3.1 LAND

Terrain within the Project area is comprised of low sandstone hills in the north and gently undulating plains in the south associated with Columboola Creek and Unnamed Tributary (Figure 2). Elevation in the Project area ranges from approximately 320 metres (m) Australian Height Datum (AHD) in the vicinity of Columboola Creek, to approximately 370 m AHD in the north (Figure 2).

The Project is located within a rural area that is predominately used for low intensity cattle grazing on native pasture. Rural residences are located within and surrounding the Project area.

Extensive tracts of cleared agricultural land are located within and surrounding the Project area, with patches of remnant vegetation generally being located within the less fertile, rocky and/or sandy areas in the northern part of the Project area. No horticultural crops are grown within the Project area, with the closest cropping enterprises located approximately 10 km to the south on the Condamine River floodplain.

Strategic Cropping Land (SCL) Validation Applications for properties mapped on the DNRM SCL Trigger Map as containing potential SCL were submitted to the DNRM with cropping history assessments in January 2013. The assessment identified that no cropping events had been conducted on any of the land mapped as potential SCL between 1 January 1999 and 31 December 2010. DNRM issued Cropping History Decision notices on 8 March 2013 which determined that these areas are non-SCL.

Coal mining, coal seam gas exploration and production and power generation are major land uses in the Surat Basin. Coal mines, coal seam gas fields and power stations in the vicinity of the Project include:

- Kogan Creek Coal Mine, approximately 50 km south-east;
- Wilkie Creek Coal Mine (currently under care and maintenance), approximately 75 km south-east;
- the Bellevue and Berwyndale coal seam gas fields to the south-west of the Project;
- the Argyle and Argyle East, Berwyndale South, Talinga, Lauren and Kenya coal seam gas fields to the south of the Project;
- the Kogan North and Daandine gas fields to the south-east of the Project; and
- the Condamine and Darling Downs coal seam gas fired power stations and the Kogan Creek coal fired power station.

The environmental values relevant to land were identified using the DEHP *Guideline (EM961) Application Requirements for Activities with Impacts to Land* (DEHP, 2014a). The following environmental values for land relevant to the Project have been identified:

- The terrain, geology, soil, shallow groundwater systems and floodplains of the Project area.
- The existing land uses of cattle grazing on unimproved pasture, remnant and regrowth vegetation and mining and petroleum production and exploration activities.
- The intrinsic soil health, function and suitability (i.e. the ability for the soil to sustain growth of native vegetation and grasses for cattle grazing).

The scope of the Project environmental assessments relevant to the environmental values for land is described in Section 6.2.

### 3.2 WATER

The Project is located within the mid-reach of the Condamine-Balonne River Basin, which forms part of the Murray-Darling Basin. Locally, the majority of the Project area is located within the upper catchment of Columboola Creek (including Stockwhip Creek), a tributary of Dogwood Creek. The remaining part of the Project area is located within the upper catchment of Punch-bowl Creek, which is also a tributary of Dogwood Creek.

Columboola Creek is an ephemeral drainage feature within the Project area, and has a total catchment area of approximately 432 square kilometres. Within the Project area, Columboola Creek flows from the west, exiting the Project area along the southern boundary of MLA 50269. An ephemeral tributary of Columboola Creek, known as Unnamed Tributary, flows through MLA 50260 and confluences with Columboola Creek south of the Warrego Highway. In May 2015, Syntech received a watercourse determination from DNRM that confirmed Columboola Creek and Unknown Tributary within the limits of the Project Area are drainage features and not watercourses. A number of smaller named and unnamed ephemeral drainage lines are located within the Project area (Figure 2).

Given the ephemeral nature of the drainage features within the Project area, surface water use is generally restricted to stock watering when water is available.

Groundwater use in the vicinity of the Project is limited, with 20 registered bores located within a 10 km search zone around the Project (Australasian Groundwater & Environmental Consultants [AGE], 2013). At these bores, the water quality is generally only suitable for stock watering.

An extensive surface water and groundwater monitoring network has been established at the Cameby Downs Mine which includes automatic (telemetric) and manual surface water and groundwater level and quality monitoring stations within and surrounding the mine site.

Syntech has installed four telemetric water quality sampling stations, two on Columboola Creek (one at the upstream extent of ML 50233 and one at the downstream extent of ML 50233) and two on Stockwhip Creek (one upstream and one downstream of the ancillary mining infrastructure including the CHPP and workshops). The monitoring data collected from the sampling stations will be used to refine the existing Cameby Downs Mine release limits and trigger levels for the Project.

The *Environmental Protection (Water) Policy, 2009* (EPP [Water]) lists the environmental values and the water quality objectives to enhance or protect the environmental values. As described in the EPP (Water), environmental values of a water resource are particular values or uses of the water that are conducive to a healthy ecosystem or for public amenity, safety or health and that require protection from the effects of habitat alteration, waste releases, mine affected runoff and changed flows.

The environmental values relevant to water have been identified from Section 6(2), Part 3 of the EPP (Water) as:

- For slightly disturbed waters – the biological integrity of an aquatic ecosystem that has effectively unmodified biological indicators, but slightly modified physical, chemical or other indicators.
- For waters that may be used for agricultural purposes – the suitability of the water for agricultural purposes.
- For waters that may be used for industrial purposes – the suitability of the water for industrial use.

The scope of the Project environmental assessments relevant to the environmental values for water is described in Section 6.3.

### 3.3 BIODIVERSITY

#### 3.3.1 Ecosystems

The Project is located within the Barakula subregion of the Brigalow Belt South Bioregion (Commonwealth Department of the Environment [DotE], 2013). This bioregion extends from Townsville in Queensland to the south of Dubbo in central-western New South Wales.

The Project area contains both terrestrial and aquatic ecosystems. The terrestrial ecosystems include woodlands, shrublands and grasslands. The aquatic ecosystems include ephemeral creeks and wetland areas. These are further described below.

##### ***Terrestrial Ecosystems***

Terrestrial flora and fauna field surveys have been completed across the Project area, including field-validation of the Queensland Government's Regional Ecosystem (RE) mapping in accordance with *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland* (Neldner *et al.*, 2012).

Seven vegetation communities were identified within ML 50233 and MLAs 50258, 50259, 50260 and 50269. Of these, six are considered to be remnant vegetation as described in the *Vegetation Management Act 1999* (VM Act). The remnant vegetation communities and their listing under the VM Act are presented in Table 3-1 and illustrated on Figure 5. It is noted that no endangered REs (namely the remnant Brigalow RE 11.4.3) are located within the Project disturbance area.



**Table 3-1**  
**Vegetation Communities Occurring within the Project Area**

Regional Ecosystem	Description	VM Act Status	Biodiversity Status
11.7.7	<i>Eucalyptus fibrosa</i> subsp. <i>nubila</i> and/or <i>Corymbia</i> spp. and/or <i>Eucalyptus</i> spp. woodland on Cainozoic lateritic duricrust	Least concern	No concern at present
11.5.1	<i>Eucalyptus crebra</i> and/or <i>E. populnea</i> , <i>Callitris glaucophylla</i> , <i>Angophora leiocarpa</i> , <i>Allocasuarina luehmannii</i> woodland on Cainozoic sand plains and/or remnant surfaces	Least concern	No concern at present
11.3.2	<i>Eucalyptus populnea</i> woodland on alluvial plains	Of concern	Of concern
11.4.3	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> shrubby open forest on Cainozoic clay plains	Endangered	Endangered
11.7.2	<i>Acacia</i> spp. woodland on Cainozoic lateritic duricrust. Scarp retreat zone	Least concern	No concern at present
11.3.25	<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines	Least concern	Of concern
-	Non-remnant grassland and shrubland	-	-

Source: AARC (2013a).

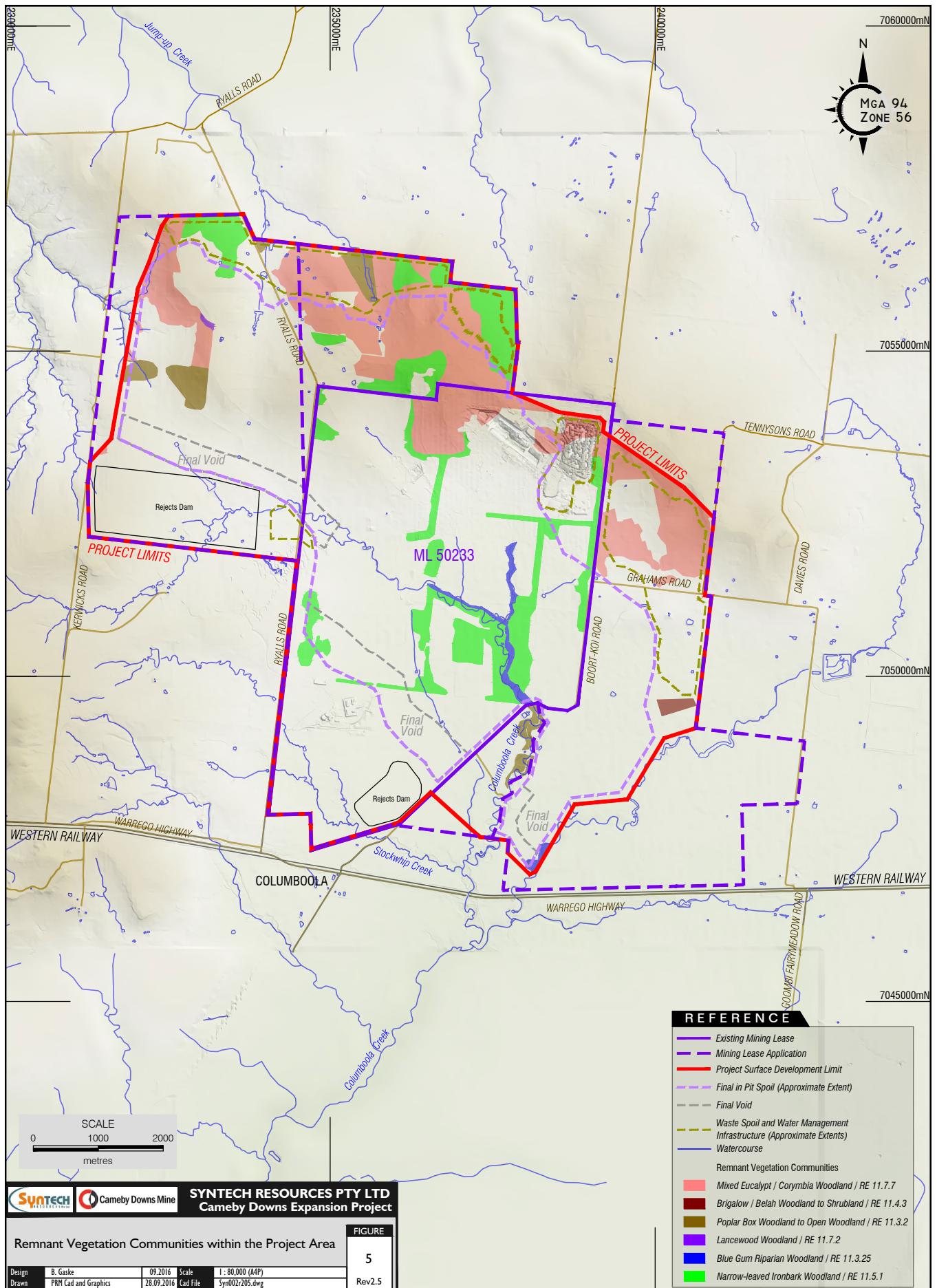
The DotE Protected Matters Database (DotE, 2014) identifies a number of threatened ecological communities as listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that may potentially occur within the Project area (Table 3-2).

**Table 3-2**  
**Threatened Ecological Communities Predicted to Occur within a Search Area Surrounding the Project Area**

Ecological Community	EPBC Act Status
Brigalow ( <i>Acacia harpophylla</i> dominant and co-dominant)	Endangered
Coolibah-Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered
Weeping Myall Woodlands	Endangered

A search of the Environmentally Sensitive Areas (ESAs) mapping tool (DEHP, 2016a) shows that no ESAs are located within the Project disturbance area. The closest ESAs are the patches of remnant Brigalow community RE 11.4.3 mapped by AARC (2013a) within MLA 50260.

No Groundwater Dependent Ecosystems have been identified in desktop or field studies within the Project area.



## Aquatic Ecosystems

The Queensland *Wetland Map* (DEHP, 2016b) identifies a number of lacustrine wetlands (lakes) within the Project area. All of the mapped lacustrine wetlands have been field-validated as stock watering dams and dammed watercourses/drainage features (as the database was developed using remote mapping methods).

### 3.3.2 Flora and Fauna Species

#### Threatened Flora and Fauna

The ecosystems described above provide habitat for a range of terrestrial and aquatic plants and animals. No threatened flora species listed under the *Nature Conservation Act 1992* (NC Act) were identified within the Project area. Threatened fauna species listed under the NC Act and the EPBC Act, known to occur within the Project area, are listed in Table 3-3.

**Table 3-3**  
**Threatened Fauna Recorded within the Project Area**

Scientific Name	Common Name	EPBC Act Status	NC Act Status
<i>Ergenia rugosa</i>	Yakka Skink	Vulnerable	Vulnerable
<i>Hemiaspis damelii</i>	Grey Snake	-	Endangered
<i>Strophurus taenicauda</i>	Golden-tailed Gecko	-	Near Threatened
<i>Tachyglossus aculeatus aculeatus</i>	Short-beaked Echidna	-	Special Least Concern

Source: AARC (2013a).

#### Migratory Fauna

The EPBC Act Protected Matters Database (DotE, 2014) indicates the potential occurrence of 10 migratory species within the Project area.

#### Declared Weeds and Pests

Three Class 2 Declared pest flora species under the *Land Protection (Pest and Stock Route Management) Act 2002* were identified within the Project area, namely Prickly Pear (*Opuntia stricta*), Velvety Tree Pear (*Opuntia tomentosa*) and Mother-of-millions (*Bryophyllum delagoense*).

Four Class 2 Declared fauna pest species were identified within the Project area including Dingo (*Canis familiaris dingo*), Feral Cat (*Felis catus*), European Rabbit (*Oryctolagus cuniculus*) and Feral Pig (*Sus scrofa*). Non-declared fauna pest species also identified include Cane Toad (*Rhinella marina*), European Hare (*Lepus capensis*) and House Mouse (*Mus domesticus*).

### 3.3.3 Relevant Environmental Values

The environmental values relevant to biodiversity were identified using the DEHP *Guideline (EM961) Application Requirements for Activities with Impacts to Land* (DEHP, 2014a). The following environmental values for biodiversity relevant to the Project have been identified:

- The health and biodiversity of the aquatic and terrestrial flora species and communities.
- The health and condition of fauna species and their habitats.
- ESAs, including the “endangered” RE (Category B ESAs).

- Matters of State Environmental Significance (MSES) listed in the *Queensland Environmental Offset Policy* (Queensland Government, 2014), including protected plants and animals (and their habitats) under the NC Act and remnant and high value regrowth “endangered” and “of concern” REs, as well as areas of connectivity that support these State Significant Biodiversity Values.

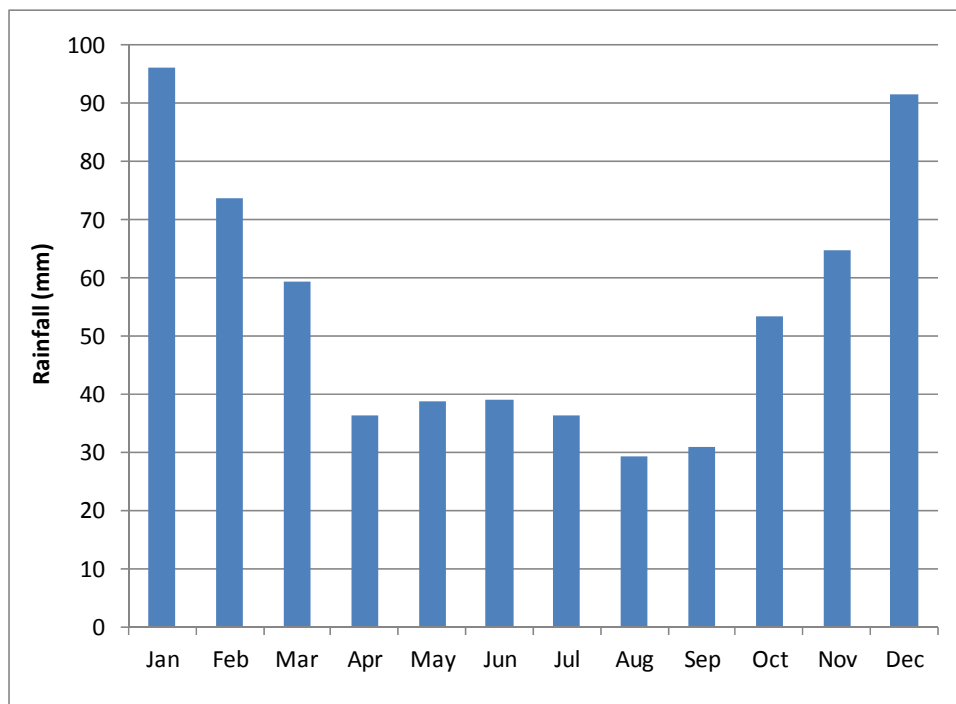
The scope of the environmental assessments relevant to the environmental values for biodiversity is described in Section 6.4.

### 3.4 CLIMATE, AIR AND NOISE

The climate of the Project area is described as sub-tropical, with approximately 50% of the annual rainfall occurring over the summer months, however, the region experiences a relatively low amount of rainfall due to its inland, semi-arid setting, compared to the sub-tropical climates of northern Queensland.

A weather station was installed at the Cameby Downs Mine in 2009. Since this time detailed climatic parameters such as temperature, rainfall, wind speed and direction and humidity have been recorded. Longer term meteorological data is available from the Bureau of Meteorology (BOM) meteorological station located at the Miles Post Office, located approximately 17 km from the Project.

The average monthly rainfall recorded at the Miles Post Office meteorological station during the 1885 – 2016 period is presented in Chart 1.



Source: BOM (2016).

**Chart 1**  
**Average Monthly Precipitation for the Miles Post Office Meteorological Station**

Average daily minimum and maximum temperatures range from 3.6 degrees Celsius (°C) in winter to 33.2°C in summer.



The prevailing wind direction varies over the seasons, with winds generally from the north, northeast and northwest during spring, summer and autumn. Southerly winds generally prevail during winter. Wind speeds in the region are predominately light to moderate, with approximately 50% of winds less than 2 metres per second.

Although no long-term air quality monitoring has been conducted in the vicinity of the Project, the existing air quality in the region is considered to be good due to the nature of the rural land use, relatively sparse population and low density of industry (Katestone Environmental, 2013). The main source of ambient dust in the region is associated with wind erosion of soil surfaces.

The *Environmental Protection (Air) Policy, 2008* (EPP [Air]) lists the environmental values and the air quality objectives to enhance or protect the environmental values. As described in the EPP (Air), environmental values for air have been developed to protect the health and biodiversity of ecosystems, human health and wellbeing, aesthetics and agricultural use.

The following environmental values for air relevant to the Project have been identified:

- The qualities of the air environment that are conducive to protecting the health and biodiversity of ecosystems.
- The qualities of the air environment that are conducive to human health and wellbeing.
- The qualities of the air environment that are conducive to protecting the aesthetics of the environment, including the appearance of buildings, structures and other property.
- The qualities of the air environment that are conducive to protecting agricultural use of the environment.

The noise environment in the vicinity of the Project is largely influenced by the current coal mining and coal seam gas operations, vehicle traffic along the Warrego Highway and local roads and trains travelling on the Western Railway Line. Noise levels vary daily, largely due to increased vehicle traffic during daytime and evening periods, and seasonally due to insect activity, which is greater during the summer.

The *Environmental Protection (Noise) Policy, 2008* (EPP [Noise]) lists the environmental values and the acoustic quality objectives to enhance or protect the environmental values. As described in the EPP (Noise), environmental values of the acoustic environment have been developed to protect the health and biodiversity of ecosystems, human health and wellbeing and community amenity.

The following environmental values for the acoustic environment relevant to the Project have been identified:

- The qualities of the acoustic environment that are conducive to human health and wellbeing, including a suitable acoustic environment for individuals to sleep, study or learn, be involved in recreation, including relaxation and conversation.
- The qualities of the acoustic environment that are conducive to protecting the amenity of the community.
- The qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystems.

The scope of the Project environmental assessments relevant to the environmental values for air and the acoustic environment are described in Sections 6.5 and 6.6 respectively.

### 3.5 SOCIO-ECONOMIC

The Cameby Downs Mine is a significant employer in the region and currently employs approximately 140 people. Approximately 60% of the current operational workforce resides in the surrounding area (including Chinchilla and Miles). No on-site accommodation is located at the Cameby Downs Mine.

The Cameby Downs Mine established a Community Reference Group (CRG) in 2010 comprising representatives from local government, landholders, business leaders, Chinchilla and Miles communities and Syntech, in consultation with the Social Impact Unit of the Department of State Development, Infrastructure and Planning. This group acts to share information on the Cameby Downs Mine and feedback from the community, and is responsible for considering sponsorship opportunities that benefit charity and community groups in the region.

The following environmental values for the regional community relevant to the Project have been identified:

- The liveability of the community.
- The economic vitality of the community.
- The community demographic.
- The availability of housing and accommodation.
- The availability of community services and infrastructure.

The scope of the Project environmental assessment relevant to the environmental values for the regional community is described in Section 6.7.1.

### 3.6 CULTURAL HERITAGE

ML 50233 has been surveyed and future disturbance areas have been cleared of items of Aboriginal cultural heritage, with these items stored within a restricted area within ML 50233. Aboriginal cultural heritage surveys of MLAs 50258, 50259, 50260 and 50269 have not yet been conducted.

Cultural Heritage Management Plans (CHMPs) were formed with the Barunggam Endorsed Parties and the Western Wakka Wakka Aboriginal Parties, respectively. The CHMPs incorporate the Project and clearly define how the Project will be managed to avoid or minimise harm to Aboriginal cultural heritage.

Consultation is ongoing with the abovementioned parties. Syntech will engage with the above parties to conduct progressive cultural heritage surveys over the Project site and infrastructure areas. The surveys will be conducted in accordance with the CHMPs ahead of any disturbance in the Project area. Any potential impact to indigenous cultural heritage will be managed in accordance with the CHMPs.

A non-indigenous cultural heritage assessment of parts of the Project area was conducted in 2010 (Converge Heritage and Community, 2010). The assessment identified 14 non-indigenous heritage sites, of which five were assessed as having potential local cultural heritage significance within or adjacent to the Project disturbance area, namely a World War II ammunition dump, a wool press and three homestead complexes. Syntech will survey the parts of the Project area not covered during the 2010 study prior to disturbance by the Project.

## 4 PROJECT DESCRIPTION

### 4.1 GEOLOGY AND COAL RESOURCE

The Project is located within the southern Surat Basin coalfields. The coal resource is located within the Walloon Coal Measures which are middle Jurassic aged sediments of the Injune Creek Group (AGE, 2013). Two episodes of coal deposition are located within the Walloon Coal Measures, with the upper Juandah Coal Measures being targeted by the Project. The coal measures subcrop in the north-east of the Project area, forming the north-east boundary of the open cut, before dipping to the south-west. The coal measures consist of laminated and thinly bedded carbonaceous shale, mudstone, siltstone, claystone and banded coal measures.

Within the Project area, the coal measures are conformably overlain by middle to late Jurassic aged Springbok Sandstone, which thickens to the south-west with the general dip of the stratigraphy (AGE, 2013). Quaternary sedimentary material is located across the broad valley of the Condamine River, the major watercourse within the region, however, exploration drilling did not identify any alluvium within the Project area. Rather, the surface profile consists of very thin soil above clay or claystone.

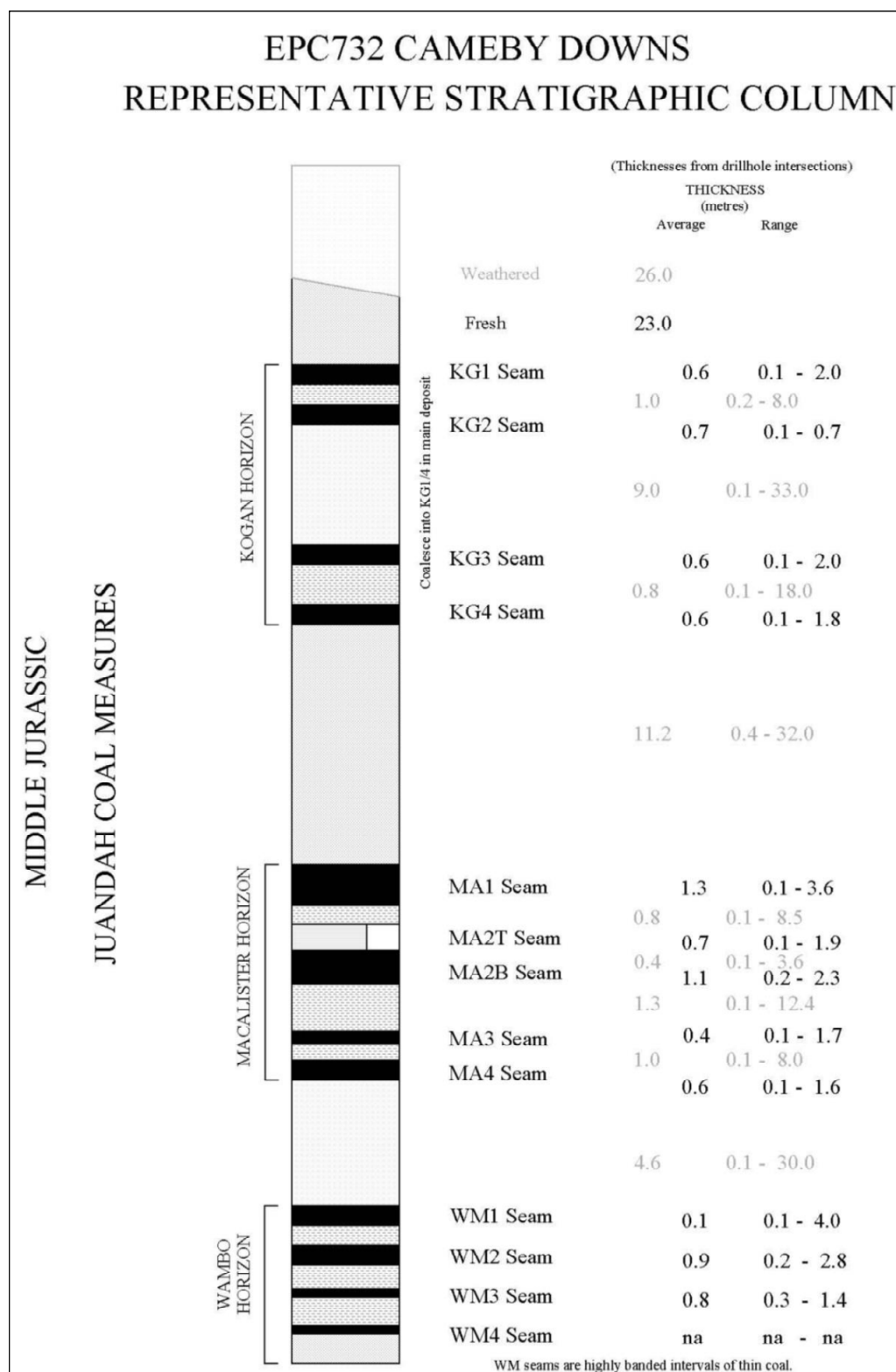
Early Jurassic sandstone formations are located at depth below the coal measures in the area, and form major confined aquifer systems, that is, they are separated and hydraulically isolated from the overlying formations by substantial thicknesses of fine grained, essentially impermeable sedimentary rocks (AGE, 2013).

Eleven individual seams have been recognised within the Juandah Coal Measures, however they are all thin (0.5 to 1.5 m thick) and split to varying degrees. The Macalister Coal seams comprise the main economic resource for the Project, supplemented by the overlying Kogan Coal seams and underlying Wambo Coal seams. A representative stratigraphic column of the Juandah Coal Measures is presented in Figure 6.

### 4.2 CONSTRUCTION ACTIVITIES

The Project will continue to use existing infrastructure and services at the Cameby Downs Mine, including the CHPP, train load-out infrastructure, water management infrastructure and rejects management facilities. Additional infrastructure (and modifications to existing infrastructure) will be progressively developed over the life of the Project, including:

- access roads, haul roads and drainage feature crossings;
- drainage line diversions, drainage channels and flood levees;
- water management infrastructure including pipelines, storage dams and sediment basins;
- coal rejects management facilities (in-pit and out-of-pit);
- topsoil stockpiles;
- mine infrastructure areas;
- electrical infrastructure;
- upgrades of the CHPP and train load-out infrastructure;
- equipment and mine infrastructure laydown areas and temporary surface facilities;
- closure of existing and construction of new local roads; and
- other ancillary activities necessary to support the Project.



**Figure 6**  
**Juandah Coal Measures Representative Stratigraphic Column**



### 4.3 MINING OPERATIONS

#### 4.3.1 Open Cut Extents

The approximate extent of the major Project open cut mining components (including open cut pits, spoil emplacements, drainage feature diversions, rejects dams and final voids) is shown on Figure 3.

Until sufficient space is available behind the active face of the open cut, spoil material will be placed in out of pit spoil dumps, as shown on Figure 3. When sufficient space is available, spoil material will be placed in pit behind the active workings to minimise surface disturbance associated with out of pit emplacements.

The nature of open cut mining results in the formation of a void when the open cut resource is fully extracted. The Project mining schedule will result in the creation of final voids upon completion of the Project. It is proposed that the final voids will be left in a stable condition upon completion of mining activities. The cost to rehandle spoil material from the out of pit emplacements to the final void will be prohibitive, and as such, it is not proposed to do this as part of the Project.

The approximate extent of the major Project components is shown on Figure 3. The Project surface development area would be in the order of 6,000 ha, subject to further detailed mine planning as part of on-going Project feasibility studies and reviews of the life of mine plans.

As described in Section 3.3.1, no clearance within endangered REs will be conducted as part of the Project.

#### 4.3.2 Open Cut Mining

The open cut mining ROM coal extraction rate will increase from the approved 2.8 Mtpa to 3.5 Mtpa. The Project life at this extraction rate will be approximately 70 years from 2016.

Open cut mining will continue to target the Juandah Coal Measures coal seams. The approximate depth of the open cut pits is estimated to be between 40 to 110 m below natural ground level, and the approximate maximum height of the waste rock emplacements is anticipated to be up to 45 m above natural ground level. The Project open cut mining areas and out-of-pit spoil emplacements are shown on Figure 3.

#### ***Vegetation Clearing and Topsoil Salvage***

Vegetation clearing and topsoil salvage will continue to be conducted in accordance with procedures outlined in the existing Cameby Downs Mine Plan of Operations.

Vegetation will be progressively cleared ahead of the active open cut and waste rock emplacement areas. Topsoil will be stripped prior to excavation of underlying overburden. Where the topsoil cannot be directly used for progressive rehabilitation it will be stockpiled for use at a later date.

#### ***Overburden and Interburden Removal and Handling***

Weathered overburden will continue to be removed using dozerpush, excavators and haul trucks where possible. Competent waste rock material will be drilled and blasted before being dozer pushed to in-pit spoil dumps and/or loaded to haul trucks and dumped in-pit and on out-of-pit spoil dumps consistent with current mining methods at the Cameby Downs Mine.

The boxcuts undertaken as part of mine development will require waste rock to be dumped in out-of-pit spoil dumps. As mining progresses away from the boxcut, the upper spoil material will be trucked out-of-pit until there is sufficient working room within the excavation for in-pit spoil dumping. Dump and pit sequencing has been designed to ensure any final pit voids will be minimised.

### ***ROM Coal Mining and Handling***

The Project will mine ROM coal from the four Kogan Seams (KG1, KG2, KG3 and KG4), the Macalister Coal Interval (MA1, MA2T, MA2B, MA3 and MA4), lying below the Kogan Coal Interval, and the Wambo Coal Interval (WM1 and WM2). The MA2 seam will always be mined and the relatively thin MA3 and MA4 seams will be extracted wherever possible.

ROM coal from the open cuts will be mined using loaders or excavators and trucked to the ROM coal stockpiles or direct to the crusher, consistent with current operations. Extensions to existing ROM coal haul roads and access roads will be constructed as required during the development of the Project.

The existing open cut mining fleet will continue to be used for Project operations, with upgrades and new fleet incorporated where required.

## **4.4 COAL PROCESSING, HANDLING AND TRANSPORT**

The existing CHPP will be used to process ROM coal, with minor upgrades to increase the throughput rate (within the existing CHPP disturbance footprint).

Consistent with existing open cut operations, ROM coal from the open cut pits will be transported by haul truck or road train to be either stockpiled or loaded directly to a ROM bin before being conveyed to the CHPP for processing. Water sprays will continue to be used on the hopper and primary sizer to minimise dust emissions.

The Project will continue to mine a portion of ROM coal of suitable quality such that it can be sold directly without beneficiation other than sizing, referred to as bypass coal. The bypass coal circuit is located adjacent to the product stockpile.

Product coal will be conveyed to the existing product stockpile or direct to the train load-out facility. Product coal will be transported by rail to the Port of Brisbane via the Queensland Rail West Moreton System, consistent with current operations.

## **4.5 WATER SUPPLY AND MANAGEMENT**

Consistent with the current water management system at the Cameby Downs Mine, runoff from undisturbed catchments will be diverted around mining operations, while runoff from disturbed catchments will be captured in the mine water management system and stored and treated for release in accordance with EA conditions, used within the CHPP or used for haul road and stockpile dust suppression.

Surface runoff generated at the Cameby Downs Mine is classified into three types:

- Clean water – surface runoff from areas which are unaffected by mining operations, including runoff from undisturbed catchments and rehabilitated mining landforms.
- Sediment laden – surface runoff and seepage from areas that are disturbed by mining operations such as waste rock emplacements and haul roads. This runoff may contain sediment, but is unlikely to contain contaminant concentrations in excess of the EA trigger levels. If of suitable quality, this water can be released to receiving watercourses/drainage features in accordance with EA conditions.
- Mine affected water – surface runoff and seepage from areas affected by mining operations and potentially containing contaminants generated by mining operations, such as coal stockpiles, open pits, service bays, fuel storage areas and the CHPP. Runoff and seepage from these areas is managed to avoid discharge of potentially mine affected water into the receiving watercourses/drainage features. In the event that a discharge is required, it is conducted in accordance with the EA release conditions.

The existing water management system at the Cameby Downs Mine includes:

- water storages and associated release points;
- mine affected water dams and in-pit water storage;
- sediment dams;
- up-catchment diversion banks and channels;
- flood levees;
- external piped water supply from QGC's Glen Eden Pond;
- internal water reticulation system; and
- sewage treatment plant.

The existing water management system will be progressively augmented as water management requirements change over the life of the Project.

The sources of water used at the Project will be consistent with the current operations, and will be supplied subject to the following priority:

- mine water supplied from pit dewatering (including groundwater inflows);
- recycled process water recovered from the CHPP and reject streams;
- surface water runoff captured and stored within the mine water management system; and
- water supplied from QGC's Glen Eden Pond.

Cameby Downs Mine currently holds a Beneficial Use Approval (BUA) (under the *Waste Reduction and Recycling Act 2011* [WRR Act]) to source water from QGC's Glen Eden Pond to the Cameby Downs Mine for use in the CHPP or for dust suppression until 2029.

It is anticipated that this water supply will remain available to the Project while QGC's coal seam gas mining and exploration activities are conducted in the area (subject to extension of the BUA approval period). If the supply becomes unavailable during the life of the Project, an alternative external water supply from other coal seam gas operations in the region, or potentially from licensed groundwater extraction, will be secured to provide a reliable make-up water source.

### ***Drainage Feature Diversions***

The development of the currently approved Cameby Downs Mine includes the diversion of Columboola Creek around the open cut extent within ML 50233. As the Project extends the open cut extent, and includes the construction of a new rejects dam within MLA 50258, the diversion of Columboola Creek will be required to commence further upstream, within MLA 50258 (Figure 3). As mentioned in Section 3.2, DNRM determined in May 2015 that Columboola Creek and Unknown Tributary are drainage features, not watercourses, in the Project area.

A conceptual design for the Columboola Creek diversion will be prepared for the Project and included in the environmental assessment of the Project.

Additional up-slope water diversions will be required for minor unnamed drainage lines which traverse the Project open cut and spoil dump extents.

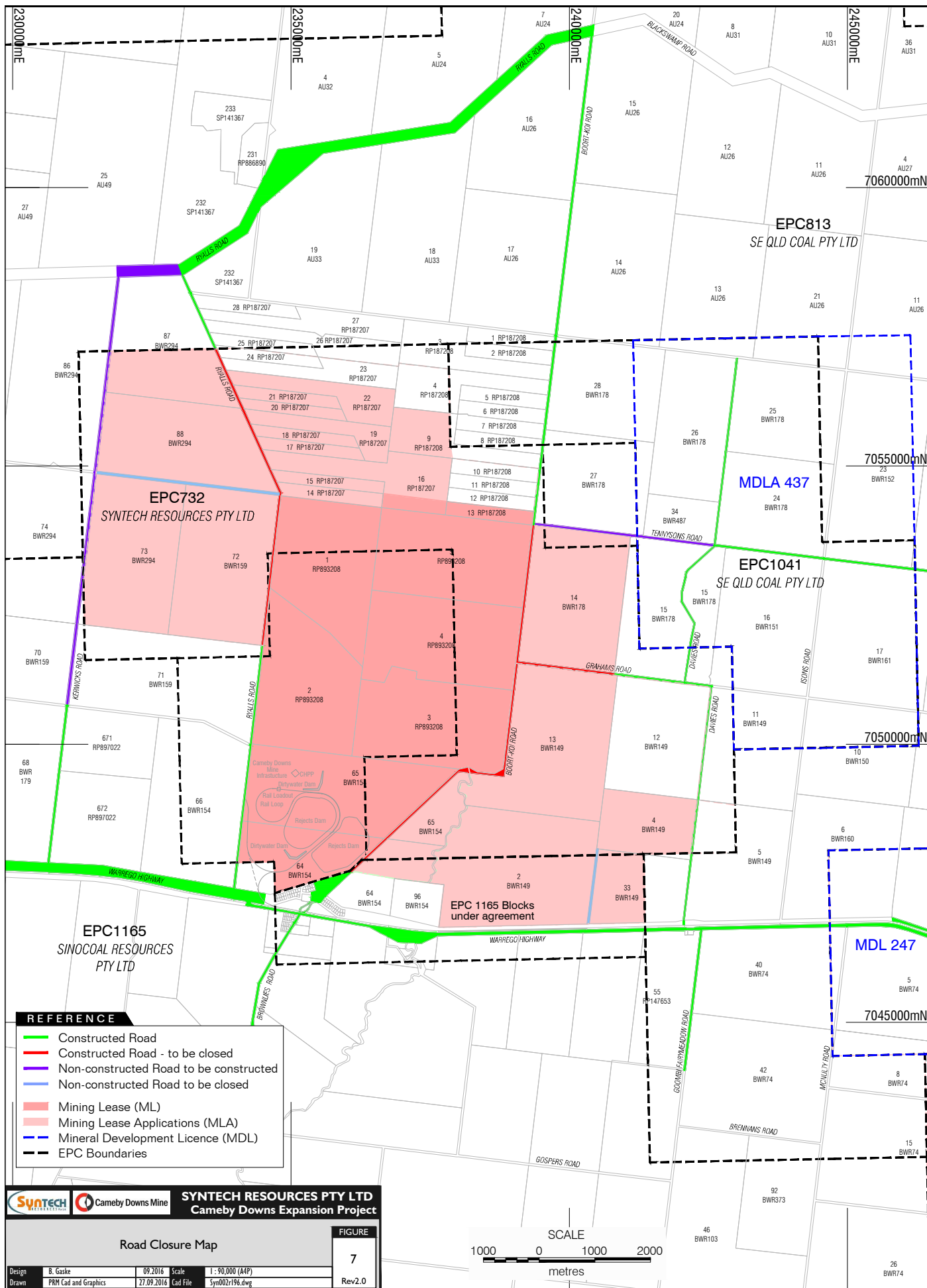
### ***Flood Levees***

Flood levees will be designed and constructed in accordance with accepted engineering standards, and hazard assessed by a Registered Professional Engineer of Queensland (RPEQ) against the DEHP guideline for assessing regulated structures. A sufficient flood protection capacity will be provided as per engineering design flood protection from Columboola Creek and Unnamed Tributary.

## **4.6 CONSTRUCTION OF LOCAL ROADS**

Parts of a number of local roads within the Project footprint, including Ryalls Road, Boort-Koi Road and Grahams Road, will be progressively closed during the life of the Project, as shown on Figure 7. New sections of road will be constructed within existing unformed road easements to enable ongoing access to the Warrego Highway from properties surrounding the Project.

The new roads will be constructed to a Rural Access 2 standard as detailed in the *Western Downs Regional Council Standard Drawing – Roads Typical Rural Road Cross Sections*.





## **4.7 WASTE MANAGEMENT**

### **4.7.1 Waste Rock and CHPP Rejects Management**

Waste rock material to be generated by the Project is anticipated to be generally non-acid forming with a low risk of dispersivity. Waste rock will be subject to progressive geochemical investigations to inform emplacement management strategies.

The waste rock emplacement strategy for the Project will be generally consistent with the current Cameby Downs Mine practices, with progressive backfilling of open cut voids behind the advancing open cut and within out-of-pit waste rock emplacements. Any waste rock material identified as having high potentially acid forming risk will only be emplaced within in-pit waste rock emplacement areas.

Rejects from the CHPP are currently pumped to a three cell emplacement system located within the rail loop. Process water from the rejects stream is decanted and returned to the mine process water circuit. As each cell is filled they will be capped with inert waste material to a depth of 1 m, following a suitable drying period, and then topsoiled and rehabilitated to pasture.

In-pit coarse reject disposal will begin at the Cameby Downs Mine in late 2016. Fine rejects will either continue to be pumped to out-of-pit reject disposal areas or disposed in-pit.

Two new out-of-pit (Figure 3) and multiple in-pit rejects disposal areas will be constructed as part of the Project.

Detailed design of the rejects disposal areas will be in accordance with the *Guideline (ESR/2016/1934) Structures which are dams or levees constructed as part of environmentally relevant activities* (DEHP, 2016c) based on the Consequence Category assessed under the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* (DEHP, 2016d).

### **4.7.2 Other Waste Management**

Table 4-1 lists non-mining waste streams and the general control strategies to be implemented for the Project.

General waste minimisation principles will be applied at the Project in accordance with the WRR Act waste management hierarchy to minimise the quantity of wastes that require off-site disposal.

**Table 4-1**  
**Non-mining Waste Streams Generated by the Project**

Waste Category	Waste Type	Waste Treatment Process
Regulated	Oily rags	Oil, fuel drums and solvents will be collected by a licensed contractor for recycling or reuse
	Oil filters	
	Grease	
	Oily water	
	Solvents/chemicals, etc.	
	Waste oil	Collected in a purpose-built tank and removed by a waste management contractor and transported to licensed facility for recycling
	Septic	Directed to the onsite Sewerage Treatment Plant; processed through the plant and treated water is used for onsite irrigation. Residual sludge is removed by a waste management contractor and transported to a licensed facility for recycling
	Tyres	Waste tyres will be stockpiled and then transported to an area of the pit which has been mined and the tyres buried
	Batteries	Waste batteries are collected by a licensed contractor for recycling or reuse
General	Food scraps	Putrescible and general waste are collected within the rubbish bins provided throughout the Project site and are regularly collected by a waste disposal contractor and disposed of offsite at an appropriate facility
	General waste	
	Wood	Collected by a licensed waste carrier and transported to a licensed facility for recycling
	Steel	Collected by a licensed waste carrier and transported to a registered facility for recycling – rebate is received per tonne
Recyclable	Paper, cardboard, bottles, etc.	Cardboard, glass, plastic and aluminium containers from the Project will be collected by a licensed contractor for recycling or reuse

## 4.8 REHABILITATION AND POST-MINING LAND USE

As is current best practice in the mining sector, rehabilitation strategies and methods for the Project have been developed to comply with the objectives outlined within *Guideline (ESR/2016/1875) Rehabilitation Requirements for Mining Resource Activities* (DEHP, 2014b) (herein referred to as Guideline ESR1875) and the *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland* (Department of Minerals and Energy, 1995).

### 4.8.1 Rehabilitation Hierarchy

The Project will adopt the rehabilitation hierarchy proposed in Guideline ESR1875. The hierarchy, in order of decreasing capacity to prevent or minimise environmental harm, is as follows:

1. Avoid disturbance that will require rehabilitation.
2. Reinstatement a “natural” ecosystem as similar as possible to the original ecosystem.
3. Develop an alternative outcome with a higher economic value than the previous land use.
4. Reinstatement previous land use (e.g. grazing or cropping).
5. Develop lower value land use.
6. Leave the site in an unusable condition or with a potential to generate future pollution or adversely affect environmental values.

The strategies listed higher in the hierarchy should be adopted in preference to those listed lower, unless there are significant environmental, economic or social issues that override such a selection. The hierarchy allows for lower values to be acceptable when they will be appropriate to the stakeholders or when higher values are impractical. However, leaving the site in an unusable condition or with the potential to cause further environmental harm is not considered acceptable and has not been proposed for the Project.

Where disturbance cannot be practically avoided (as per hierarchy item 1), the overarching rehabilitation principal of the Project is to remediate the disturbed area as per the above hierarchy. The majority of the disturbed area on the Project site will be reinstated to a land use of low intensity grazing. This reflects the land use of the site pre-mining, as per hierarchy item 4. Where practical, rehabilitating to a “natural” ecosystem or a land use with a higher economic value (i.e. items 2 and 3 of the hierarchy) will be considered. It is expected that some disturbance areas, such as final voids, may achieve a reduced land value upon rehabilitation in accordance with hierarchy item 5. Riparian corridors along the proposed creek diversions will be rehabilitated to reinstate habitat as similar as possible to the original (as per hierarchy item 2).

During the operational life of the mine, consultation with stakeholders, including local communities and government authorities, may indicate a preference for an alternative post-mining land use of higher economic value. If such a situation arises Syntech will investigate the options in consultation with these stakeholders. An example may be retaining the constructed rail infrastructure post decommissioning where it is of higher economic benefit to the post-mining land use.

#### **4.8.2 Rehabilitation Goals**

In accordance with the Guideline ESR1875, the general rehabilitation goals for the Project are to return the site to a state that is:

- safe to humans and wildlife;
- non-polluting;
- stable; and
- able to sustain the agreed post-mining land use.

#### **4.8.3 Progressive Rehabilitation**

In order to reduce the amount of disturbed land at any one time, rehabilitation will be progressively undertaken on areas that cease to be used for mining or mining-related activities soon after becoming available.

#### **4.8.4 Post-mining Land Use**

It is proposed to return the Project site to its predominant pre-mining land use of cattle and sheep grazing. This will be enhanced with the use of native vegetation, used in wind breaks along embankments and as riparian zones along the various waterways.

#### **4.8.5 Rehabilitation of Mining Domains**

Rehabilitation of mining domains would be conducted in accordance with the following considerations.

##### ***Spoil Dumps***

Steeper slopes of the spoil dumps would be contoured to an appropriate angle to maintain geotechnical stability (e.g. 1V:3.5H) and covered with an appropriate protective layer (e.g. 1 m thick layer of rock mulch [a mixture of competent rock and topsoil]), while gentler slopes (e.g. with a maximum angle of 1V:10H) would be topsoiled to a depth of approximately 0.15 m. The slopes would then be seeded with local grass and shrub species. The final shape and surface treatment for each spoil dump will be determined during the detailed design stage.

The tops of spoil dumps would be contoured to drain away from the pits, using rock mulch where required to prevent erosion.

##### ***Final Voids***

Final voids will remain upon completion of mining activities, and maintained in the final landform as it would be cost prohibitive to backfill them.

The highwalls of the final voids will be designed to be stable in the long term, and a safety berm will be constructed around the void perimeters to minimise access to the voids by people and wildlife.

Catchment areas of the final voids will be minimised through the creation of upslope diversion bunds, and they would be protected from 1:1,000 Annual Exceedance Probability (AEP) flood events.

##### ***Rejects Dams***

Rejects dams will be covered with a 0.5 m thick layer of competent rock followed by a 0.5 m thick layer of compacted non-sodic clay. The rock layer will act as a capillary break to prevent salts from being drawn up from the emplaced rejects. The clay layer will be shaped such that it sheds water to the exterior of the emplacement, rather than allowing water rainfall to pool on its surface.

A minimum of 0.1 m of topsoil will be spread over the clay layer and vegetated with local species appropriate for a proposed final land use of low intensity grazing.

Slopes of the rejects dams will be contoured to 1V:10H.

##### ***Sediment Dams***

Dams will be retained for agricultural use or decommissioned. If decommissioned, water will be drained and the walls pushed in to cover the sediment held in the base of the structure. The structure will be ripped and seeded with appropriate species.

##### ***Access and Haul Roads***

Access roads that would be used for agricultural activities will not be rehabilitated and will be left in place in agreement with the land owner.

Roads to be rehabilitated will be deep ripped and if necessary seeded with appropriate species.

### ***Plant and Infrastructure***

All buildings, ancillary infrastructure and materials will be dismantled and removed upon completion of mining operations, or left in place in agreement with the landholder. Disturbed land would be ripped, re-contoured and seeded.

Where potential land contamination exists, an investigation would be conducted in accordance with relevant guidelines and appropriate measures taken to remove any contamination.

#### **4.8.6 Rehabilitation Management Plan**

The Cameby Downs Mine has a Rehabilitation Management Plan (RMP) that has been prepared in accordance with Condition H3 of the EA. The RMP includes:

- mapping of existing areas of rehabilitation;
- details of rehabilitation methods applied to identified domain areas;
- identification of success factors for domain areas;
- details of future rehabilitation actions and methods;
- identification of reference sites for each rehabilitation treatment to be used to develop rehabilitation success criteria and for comparative assessment;
- description of landform design criteria including the end of mine landform design;
- description of how the landform design will be consistent with the surrounding topography;
- description of rehabilitation monitoring and maintenance requirements;
- description of post-mining land uses;
- description of spoil characteristics, soil analysis and separation for use on rehabilitation; and
- identification of potential rehabilitation issues and how they will be addressed.

The RMP will be revised to include the Project.

Syntech proposes to adopt the rehabilitation conditions contained in the Model EA Conditions as part of this EA amendment application. Syntech will prepare a rehabilitation requirements table describing the rehabilitation goal and objective, indicators and completion criteria for the Project domains, which will be included in the RMP.

### **4.9 EMPLOYMENT AND COMMUNITY**

The Project will facilitate continued employment at the Cameby Downs Mine.

The Cameby Downs Mine will continue supporting the local and regional community. Opportunities to support the community will be identified through the existing CRG, which will continue during the Project.

The Project will continue to identify opportunities to source goods and services from local businesses where practicable. It will also enable the continued payment of royalties and taxes.

## 5 PLANNING CONSIDERATIONS

### 5.1 APPLICABILITY OF PART 7, CHAPTER 5 OF ENVIRONMENTAL PROTECTION ACT 1994

Approval for the Project is proposed via the EA amendment provisions under Chapter 5, Part 7 of the EP Act. This document has been prepared to provide DEHP with a description of the Project, to identify the environmental values relevant to the Project, and to provide a summary of the potential impacts and mitigation measures for the Project. It is anticipated that DEHP will use the information presented in this document to:

- Make an assessment level decision in accordance with Section 228 of the EP Act.
- Decide whether to issue a “Decision to require a substituted way to give and publish the application notice”.
- Decide whether to give an Information Request in accordance with Section 140 of the EP Act to request further information required to assess the EA amendment application. That consideration will include whether an EIS is required for the Project under Section 143 of the EP Act.

Section 226 of the EP Act states the requirements for EA amendment applications generally. These requirements, and how they are considered as part of the EA amendment application process, are provided in Table 5-1.

The information presented in this document will enable DEHP to make an assessment level decision in accordance with Section 228 of the EP Act. Consideration of the Project against the minor amendment requirements of Section 223 of the EP Act is presented in Table 5-2. Syntech considers that the application is a major EA amendment application.

**Table 5-1**  
**EP Act Section 226 – Requirements for Amendment Application Generally**

Section 226 Requirement	Consideration
An amendment application must	
(a) be made to the administering authority; and	This report will accompany an amendment application submitted to the administering authority (DEHP).
(b) be made in the approved form; and	The amendment application will be made in the approved form.
(c) be accompanied by the fee prescribed under a regulation; and	The prescribed fee will accompany the application.
(d) describe the proposed amendment; and	Sections 1 and 4 describe the proposed amendment.
(e) describe the land that will be affected by the proposed amendment; and	The land affected by the Project is summarised in Section 2.
(f) describe any development permits in effect under the Planning Act for the carrying out of the relevant activity for the authority; and	Not applicable. No development permits are currently in effect under the <i>Sustainable Planning Act 2009</i> .
(g) state whether each relevant activity will, if the amendment is made, comply with any eligibility criteria for the activity; and	Not applicable. The Project will operate under an amended version of the existing Cameby Downs Mine EA (site-specific EA).
(h) if the application states that each relevant activity will, if the amendment is made, comply with any eligibility criteria for the activity - include a declaration that the statement is correct; and	Not applicable.
(i) state whether the application seeks to change a condition identified in the authority as a standard condition; and	Not applicable.



**Table 5-1 (Continued)**  
**EP Act Section 226 – Requirements for Amendment Application Generally**

<b>Section 226 Requirement</b>	<b>Consideration</b>
(j) if the application relates to a new relevant resource tenure for the authority that is an exploration permit or GHG permit - state whether the applicant seeks an amended environmental authority that is subject to the standard conditions for the relevant activity or authority, to the extent it relates to the permit; and	Not applicable. The application does not relate to a new resource tenure for the authority that is an exploration permit or greenhouse gas (GHG) permit.
(k) include an assessment of the likely impact of the proposed amendment on the environmental values, including -  (i) a description of the environmental values likely to be affected by the proposed amendment; and	Environmental values relevant to the Project are described in Section 3, and potential impacts to the environmental values are summarised in Section 6. Specialist studies to be conducted as part of Syntech's environmental assessments will further consider the potential impacts to the identified environmental values and compliance with model mining conditions.
(ii) details of any emissions or releases likely to be generated by the proposed amendment; and	Potential emissions and releases are identified in Sections 6.2, 6.3, 6.5 and 6.6. Specialist studies to be conducted as part of Syntech's environmental assessments will further consider the potential impacts to the identified environmental values and compliance with model mining conditions.
(iii) a description of the risk and likely magnitude of impacts on the environmental values; and	A preliminary risk assessment has been conducted and is presented in Section 6.1 and will be reviewed as part of Syntech's environmental assessments.
(iv) details of the management practices proposed to be implemented to prevent or minimise adverse impacts; and	Potential management measures are summarised in Section 6. Specialist studies conducted as part of Syntech's environmental assessments will identify specific management measures to prevent or minimise adverse impacts associated with the Project and verify compliance with model mining conditions.
(v) details of how the land the subject of the application will be rehabilitated after each relevant activity ceases; and	A summary of rehabilitation measures is presented in Section 4.8. Syntech will update the Plan of Operations to describe rehabilitation of the Project prior to commencement of Project operations.
(l) include a description of the proposed measures for minimising and managing waste generated by any amendments to the relevant activity; and	A summary of waste management is provided in Section 4.7.
(m) include details of any site management plan or environmental protection order that relates to the land the subject of the application; and	Not applicable.
(n) include any other document relating to the application prescribed under a regulation.	Not applicable.

**Table 5-2**  
**EP Act Section 223 – Minor Amendment Criteria**

Minor Amendment Criteria	Consideration
<b>Minor amendment</b> , for an environmental authority, means an amendment that is - (a) a condition conversion; or	Not applicable.
(b) a minor amendment (threshold).	See below.
<b>Minor amendment (threshold)</b> , for an environmental authority, means an amendment that the administering authority is satisfied - (a) is not a change to a condition identified in the authority as a standard condition, other than - (i) a change that is a condition conversion; or (ii) a change that is not a condition conversion but that replaces a standard condition of the authority with a standard condition for the environmentally relevant activity to which the authority relates; and	Not applicable for the reason identified in Table 5-1.
(b) does not significantly increase the level of environmental harm caused by the relevant activity; and	The Project's open cut extensions and associated out-of-pit spoil emplacements will increase the level of surface disturbance at the Cameby Downs Mine.
(c) does not change any rehabilitation objectives stated in the authority in a way likely to result in significantly different impacts on environmental values than the impacts previously permitted under the authority; and	The proposed amendment does not change any rehabilitation objectives in a way likely to result in significantly different impacts on environmental values than the impacts previously permitted under the EA.
(d) does not significantly increase the scale or intensity of the relevant activity; and	The annual ROM coal extraction rate would be increased for the Project from 2.8 Mtpa to 3.5 Mtpa.
(e) does not relate to a new relevant resource tenure for the authority ...; and	The application relates to four new MLs (currently under application).
(f) involves an addition to the surface area for the relevant activity of no more than 10% of the existing area; and	The Project will involve an addition to the surface area for the relevant activity of more than 10% of the existing area.
(g) for an environmental authority for a petroleum activity ...; and	Not applicable. The EA is not for a petroleum activity.
(h) if the amendment relates to a new relevant resource tenure for the authority that is an exploration permit or GHG permit...	Not applicable. The application does not relate to a new exploration permit or GHG permit.

## 5.2 ENVIRONMENTAL IMPACT STATEMENT TRIGGERS

Section 143 of the EP Act prescribes that an EIS may be required for particular site-specific applications for resource activities. The DEHP *Guideline: Triggers for Environmental Impact Statements (EIS) under the Environmental Protection Act 1994 for Mining and Petroleum Activities* (DEHP, 2014c) lists potential 'EIS triggers' for amendment applications for existing mining sites (brownfield sites) (Table 5-3). Based on the assessment in Table 5-3, an EIS should not be required for the Project having regard to this guideline.

This report provides information relevant to the DEHP's consideration of the 'standard criteria' listed in Schedule 4 of the EP Act when considering if an EIS is required under Section 143(3) of the EP Act.

## 5.3 RELEVANT LEGISLATION AND POLICY REQUIREMENTS

Table 5-4 lists Commonwealth and State legislation that may be relevant to the Project.

**Table 5-3**  
**Mining Projects – Triggers for Brownfield Sites (Amendment Applications)**

EIS Trigger	Relevance to the Project
<i>An EIS is required for a proposed major amendment of mining activities as a result of one or more of the following:</i>	
<i>(i) for existing mines extracting between 2-10 million tonnes/year (t/y) ROM ore or coal, an increase in annual extraction of more than 100% or 5 megatonnes/y (Mt/y) (whichever is the lesser)</i>	The Cameby Downs Mine is currently approved to extract up to 2.8 Mtpa of ROM coal. The proposed change would be to increase ROM coal extraction to 3.5 Mtpa. This is less than a 5 Mtpa increase and represents a 25% increase in annual extraction (i.e. less than 100%).
<i>(ii) for existing mines extracting over 10 million t/y ROM ore or coal, an increase in annual extraction of more than 50% or 10 Mt/year (whichever is the lesser)</i>	Not applicable.
<i>(iii) for existing mines extracting more than 20 million t/y ROM ore or coal extraction, an increase in annual extraction of greater than 25%</i>	Not applicable.
<i>(iv) proposed activities in a Category A or B environmentally sensitive area, unless previously authorised under Queensland legislation</i>	The Project will not extend into a Category A or B Environmentally Sensitive Area that has not previously been authorised by the State.
<i>(v) a substantial change in mining operations, e.g. from underground to open cut, or (for underground mining), or a change from minor subsidence to potentially substantial subsidence</i>	The Project will not involve a substantial change in mining operations.
<i>(vi) the introduction of a novel or unproven resource extraction process, technology or activity.</i>	The Project will not introduce a novel or unproven resource extraction process, technology or activity.

**Table 5-4**  
**Key Commonwealth and State Legislation and Policy Relevant to the Project**

<b>Commonwealth Legislation and Associated Subordinate Legislation</b>
<i>Environment Protection and Biodiversity Conservation Act 1999</i>
<ul style="list-style-type: none"> <li><i>Environment Protection and Biodiversity Conservation Regulation 2000</i></li> </ul>
<i>Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy (October 2012)</i>
<i>National Greenhouse and Energy Reporting Act 2007</i>
<i>Native Title Act 1993</i>
<b>Queensland Legislation and Associated Subordinate Legislation</b>
<i>Environmental Protection Act 1994</i>
<ul style="list-style-type: none"> <li><i>Environmental Protection Regulation 2008</i></li> <li><i>Environmental Protection (Air) Policy 2008</i></li> <li><i>Environmental Protection (Noise) Policy 2008</i></li> <li><i>Environmental Protection (Water) Policy 2009</i></li> </ul>
<i>Waste Reduction and Recycling Act 2011</i>
<ul style="list-style-type: none"> <li><i>Waste Reduction and Recycling Regulation 2011</i></li> </ul>
<i>Vegetation Management Act 1999</i>
<ul style="list-style-type: none"> <li><i>Vegetation Management Regulation 2012</i></li> </ul>
<i>Nature Conservation Act 1992</i>
<ul style="list-style-type: none"> <li><i>Nature Conservation (Wildlife) Regulation 2006</i></li> </ul>
<i>Water Act 2000</i>
<ul style="list-style-type: none"> <li><i>Water Regulation 2002</i></li> </ul>
<i>Fisheries Act 1994</i>

**Table 5-4 (Continued)**  
**Key Commonwealth and State Legislation and Policy Relevant to the Project**

<b>Queensland Legislation and Associated Subordinate Legislation</b>
<i>Aboriginal Cultural Heritage Act 2003</i>
<i>Sustainable Planning Act 2009</i>
<ul style="list-style-type: none"> <li><i>Sustainable Planning Regulation 2009</i></li> </ul>
<i>Mineral Resource Act 1989</i>
<ul style="list-style-type: none"> <li><i>Mineral Resources Regulation 2003</i></li> </ul>
<i>Land Protection (Pest and Stock Route Management) Act 2002</i>
<ul style="list-style-type: none"> <li><i>Land Protection (Pest and Stock Route Management) Regulation 2003</i></li> </ul>
<i>Mineral and Energy Resources (Common Provisions) Act 2014</i>
<i>Transport Infrastructure Act 1994</i>
<i>Queensland Heritage Act 1992</i>
<i>Queensland Environmental Offsets Policy (Version 1.1) (December 2014)</i>
<i>Regional Planning Interests Act 2014</i>

### 5.3.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act identifies and provides protection for Matters of National Environmental Significance (MNES). It streamlines national environmental assessment and approval processes, protects Australian biodiversity and integrates management of important natural and cultural places.

Under the EPBC Act an action will require approval from the Commonwealth Minister for the Environment if the action has, will have, or is likely to have a significant impact on a MNES, where a MNES is:

- World Heritage properties;
- National Heritage Places;
- RAMSAR Wetlands of international importance;
- listed threatened species and communities;
- migratory species protected under international agreements;
- Commonwealth marine areas;
- Nuclear Actions;
- Great Barrier Reef Marine Park; or
- a water resource, in relation to coal seam gas development and large coal mining development.

Permits are required under the EPBC Act for:

- certain activities in Commonwealth reserves;
- activities that affect listed or threatened species and communities;
- the import and export of wildlife; and
- activities involving protected species in the Territories of Christmas Island, Cocos (Keeling) Islands and Coral Sea Islands.

The Project will be referred to the Commonwealth Minister for the Environment for consideration as to whether it constitutes a 'controlled action' and therefore requires approval under the EPBC Act.

### 5.3.2 Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy

The *Environmental Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy 2012* (EPBC Act Offset Policy) is administered by DotE and outlines the Australian Government's approach to the use of environmental offsets ('offsets') under the EPBC Act.

Offsets are defined as measures that compensate for the residual adverse impacts of an action on the environment. Where appropriate, offsets are considered during the assessment phase of an environmental impact assessment under the EPBC Act.

The policy is designed to protect national environmental assets, known as MNES. If the Project is determined to be a controlled action, environmental assessments will be conducted, and any significant residual impacts to MNES will be offset in accordance with the policy as required.

### 5.3.3 National Greenhouse and Energy Reporting Act 2007

It is a legislative requirement for the Project to report under the *National Greenhouse and Energy Reporting Act 2007* (NGER Act). The NGER Act establishes a national framework for Australian corporations to report greenhouse gas emissions, reductions, removals and offsets and energy consumption and production as of 1 July 2008.

Under the NGER Act, corporations are required to register and report if they emit greenhouse gases, produce energy or consume energy at or above the specified thresholds as follows:

- Facility threshold: facilities that emit 25 kilotonnes or more of greenhouse gas, or produce/consume 100 terajoules or more of energy; or
- Corporate Group thresholds: a corporate group that emits 50 kilotonnes or more of greenhouse gas, or produce/consume 200 terajoules or more of energy.

The NGER Act dictates the manner in which reporting needs to be undertaken. The Cameby Downs Mine triggers the NGER Act reporting threshold, and accordingly reports all energy use and greenhouse gas emissions from its activities. This would include any emissions from the Project.

### 5.3.4 Native Title Act 1993

The *Native Title Act 1993* provides for the recognition and protection of Native Title. It is intended to set standards for the determination of claims to native title, and establish ways to deal with compensations relating to such claims. It also enables Indigenous Land Use Agreements (ILUA) to be made between native title parties and other interest holders.

The majority of the Project land is freehold and therefore Native Title rights are not applicable. However, the *Native Title Act 1993* is relevant to the Project for those small areas of land where Native Title may apply, such as road reserves, drainage features and easements. Native Title rights relevant to those small areas of land have been extinguished.

### 5.3.5 Environmental Protection Act 1994

The EP Act was established to protect Queensland's environment, while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

The EP Act utilises a number of mechanisms to achieve its objectives. These include:

- licensing or approving all ERAs;
- issuing Environmental Protection Policies (EPPs);
- allowing for improvement through Transitional Environmental Programs; and
- creating a General Environmental Duty.

Under the EP Act, DEHP has assumed responsibility for environmental impact assessment, administration of environmental authorities, as well as compliance, auditing and monitoring of environmental management of mining.

### 5.3.6 Environmental Protection Regulation 2008

The *Environmental Protection Regulation 2008* (EP Regulation) provides the basis for effective and efficient administration and enforcement of the object and provisions of the EP Act. The EP Regulation defines ERAs which are specific activities that have the potential to cause an environmental impact.

Section 7 details the resource ERA and prescribed ERAs associated with the Project.

The EP Act also provides for the management of a number of environmental aspects in Queensland, including environmental noise, the air environment and water. The legislation applies to government, industry and individuals and provides a mechanism for the delegation of responsibility to other government departments and local government and provides all government departments with a mechanism to incorporate environmental factors into decision-making.

The EP Act gives the Minister for Environment and Heritage Protection the power to create EPPs that identify and aim to protect environmental values that are conducive to the health and well-being of humans and biological integrity.

### 5.3.7 Environmental Protection (Noise) Policy 2008

The EP Act is the principal legislation in Queensland relating to environmental noise. This legislation refers to the EPP (Noise). Section 7 of the EPP (Noise) states:

*The environmental values to be enhanced or protected under this policy are the qualities of the acoustic environment that are conducive to:*

- (a) *The wellbeing of the community or a part of the community, including its social and economic amenity;*  
*or*
- (b) *The wellbeing of an individual, including the individual's opportunity to have sleep, relaxation and conversation without unreasonable interference from intrusive environmental noise.*

Environmental values and acoustic criteria described in the EPP (Noise) will be considered for the Project.

### 5.3.8 Environmental Protection (Air) Policy 2008

The EPP (Air) was issued in 2008. The administering authority must consider the requirements of the EPP (Air) when it decides an application for an environmental authority, amendment of a licence or approval of a draft environmental management plan. Schedule 1 of the EPP (Air) specifies air quality indicators and goals for Queensland.



Environmental values and air quality indicators and goals described in the EPP (Air) will be considered for the Project.

### **5.3.9 Environmental Protection (Water) Policy 2009**

This legislation refers to the EPP (Water). Section 5 of the EPP (Water) states how the purpose of the policy is to be achieved:

- (a) identifying environmental values and management goals for Queensland waters;*
- (b) stating water quality guidelines and water quality objectives to enhance or protect the environmental values;*
- (c) providing a framework for making consistent, equitable and informed decisions about Queensland waters; and*
- (d) monitoring and reporting on the condition of Queensland waters.*

Environmental values and management goals described in the EPP (Water) will be considered for the Project.

### **5.3.10 Waste Reduction and Recycling Act 2011**

The purpose of the WRR Act is to encourage resource efficiency and recovery, and to promote waste reduction and avoidance. Section 3 of the WRR Act states the objects of the Act as follows:

- to promote waste avoidance and reduction, and resource recovery and efficiency actions;
- to reduce the consumption of natural resources and minimise the disposal of waste by encouraging waste avoidance and the recovery, re-use and recycling of waste;
- to minimise the overall impact of waste generation and disposal;
- to ensure a shared responsibility between government, business and industry, and the community in waste management and resource recovery; and
- to support and implement national frameworks, objectives and priorities for waste management and resource recovery.

The Act achieves the objects through the following provisions:

- a requirement for local governments and Queensland Government agencies to prepare waste management plans;
- for any waste products that are identified as a growing problem for landfill in the future, a product stewardship arrangement will be implemented; and
- the strengthening of illegal dumping and litter offences, including through the public reporting of vehicle-related littering offences.

Section 5 of the WRR Act presents further information on the objectives of the Act.

Waste management measures described in the WRR Act will be considered for the Project.

### 5.3.11 Vegetation Management Act 1999

The VM Act was proclaimed as part of a planning framework for the management of native vegetation across Queensland. The *Vegetation Management Regulation 2000* (VMR) prescribes the status of each of the REs identified to occur within Queensland.

Although the VM Act does not apply to the clearing of vegetation on the Project, the basis for biodiversity conservation is still valid and can be used to assess the conservation significance of the vegetation communities on the Project. This includes the conservation status (Vegetation Management Class [VM Class]) categories of each RE under the VM Act, which are listed below as is the definition of Remnant Vegetation:

- Endangered RE:
  - less than 10% of pre-clearing extent remaining; and
  - 10-30% of pre-clearing extent remaining and remnant <10,000 ha.
- Of Concern RE:
  - 10-30% of its pre-clearing distribution remains; and
  - 30% of the pre-clearing extent remains and the remnant vegetation remaining is <10,000 ha.
- Least Concern RE:
  - greater than 30% of the pre-clearing distribution remains and remnant vegetation remaining is greater than 10,000 ha.
- Remnant Vegetation, for an area of Queensland for which there is no RE map or remnant vegetation map, means any vegetation where the predominant canopy:
  - covers more than 50% of the undisturbed predominant canopy;
  - averages more than 70% of the vegetation's undisturbed height; and
  - is composed of species characteristic of the vegetation's undisturbed predominant canopy.

In addition, a Biodiversity Status is used to determine ESAs that are used for regulation of the mining industry, through provisions in the EP Act. The Biodiversity Status is based on an assessment of the condition of remnant vegetation in addition to the criteria used to determine the VM Class under the VM Act, as outlined above.

### 5.3.12 Nature Conservation Act 1992

The most relevant portions of the NC Act, to the Project, are the sections which pertain to wildlife and habitat conservation. The class of wildlife to which the NC Act applies includes protected wildlife, which is defined as:

- extinct in the wild wildlife;
- endangered wildlife;
- vulnerable wildlife;
- near threatened wildlife; and
- least concern wildlife.

Species listed under the above classes are published in the associated *Nature Conservation (Wildlife) Regulation 2006* (NCWR).

The NC Act defines 'threatening processes' as any process that is capable of:

- a) Threatening the survival of any protected area, area of major interest, protected wildlife, community of native wildlife or native wildlife habitat; or
- b) Affecting the capacity of any protected area, area of major interest, protected wildlife, community of native wildlife or native wildlife habitat to sustain natural processes.

The NC Act is relevant to the Project should any flora or fauna species of conservation significance, as detailed in the NCWR, be found on the Project area.

#### **5.3.13 Water Act 2000**

The *Water Act 2000* governs the construction, control and management of works with respect to water conservation and protection, irrigation, drainage, water supply, flood control and prevention. It also governs the safety and surveillance of dams.

The Project involves a proposed diversion of Columboola Creek and possible overland water harvesting via dams situated in the mine site, and as such these works may require approval under the *Water Act 2000* and the *Water Resource (Condamine and Balonne) Plan 2004*, respectively.

#### **5.3.14 Fisheries Act 1994**

The main purpose of the *Fisheries Act 1994* is to provide for the use, conservation and enhancement of the community fisheries resources and fish habitats as a way to apply and promote the principles of ecologically sustainable development. This means using, conserving and enhancing the community's fisheries so that ecological processes on which life depends are maintained and the total quality of life, both now and in the future, can be enhanced.

The *Fisheries Act 1994* may be relevant to the Project in relation to waterways of the Project site, including Columboola Creek, which may serve as fish habitat.

#### **5.3.15 Aboriginal and Cultural Heritage Act 2003**

The main purpose of the *Aboriginal and Cultural Heritage Act 2003* is to provide effective recognition, protection and conservation of Aboriginal cultural heritage.

Permits are not required for cultural heritage; rather a duty of care is required and expected by the proponent. This duty of care provides that:

*A person who carries out an activity must take all reasonable and practicable measures to ensure that the activity does not harm Aboriginal cultural heritage.*

The *Aboriginal and Cultural Heritage Act 2003* requires a CHMP or another approved agreement be prepared and agreed to by registered aboriginal representative parties. This Act applies to the Project and a CHMP has been negotiated by the registered aboriginal representative parties, and the proponent.

### 5.3.16 Sustainable Planning Act 2009

The purpose of the *Sustainable Planning Act 2009* (SP Act) is to seek to achieve ecological sustainability by:

- (a) managing the process by which development takes place, including ensuring the process is accountable, effective and efficient and delivers sustainable outcomes;
- (b) managing the effects of development on the environment, including managing the use of premises; and
- (c) continuing the coordination and integration of planning at the local, regional and State levels.

Section 232(2) of the SP Act legislates that the *Sustainable Planning Regulation 2009* (SP Regulation) may define development that is not covered by the SP Act. Schedule 4 Table 5 Items 1 and 2 of the SP Regulation defines that activities authorised under the MR Act or mining activities subject to an EA under the EP Act are not declared to be development under the SP Act.

With regard to development on areas off the ML, the above exemptions do not apply. Accordingly, development off a ML may constitute 'assessable development' (for which a development application is required) under the SP Act s232 and as defined in Schedule 3 of the SP Regulation or the appropriate shire or regional planning scheme.

Syntech will submit (where required) the development applications for any development outside the ML areas, such as the proposed local road closure and construction works.

### 5.3.17 Mineral Resources Act 1989

The MR Act provides for the authorisation of mining tenures in the form of Prospecting Permits, Mining Claims, Exploration Permits, Mineral Development Licences and MLs. 'Mine' itself is defined in Part 1, Section 6A of the MR Act.

The objectives of the MR Act are to:

- a) encourage and facilitate prospecting, exploring for and mining of minerals;
- b) enhance knowledge of the mineral resources of the State;
- c) minimise land use conflict with respect to prospecting, exploring and mining;
- d) encourage environmental responsibility in prospecting, exploring and mining;
- e) ensure an appropriate financial return to the State from mining;
- f) provide an administrative framework to expedite and regulate prospecting, exploring for and mining of minerals; and
- g) encourage responsible land care management in prospecting, exploring and mining.

The MR Act specifically applies to the Project in relation to the required tenure (MLs) currently under application and in force.

### 5.3.18 Transport Infrastructure Act 1994

The *Transport Infrastructure Act 1994* provides for and encourages effective integrated planning and efficient management of a system of transport infrastructure. The relevant objectives of this act are as follows:

- allow the government to have a strategic overview of the transport system;
- allow for effective planning and management of a system of State and National roads;
- allows influence over the total road network to contribute to efficient transport; and
- account is taken to provide adequate safety and community access to transport networks.

The *Transport Infrastructure Act 1994* applies to the Project in relation to any impact or interruption to transport infrastructure, including proposed mine access and/or haul roads intersecting the Western Railway or Warrego Highway, such as Ryalls Road.

### 5.3.19 Queensland Heritage Act 1992

The *Queensland Heritage Act 1992* exists for the protection of Queensland's historical cultural heritage since the time of non-indigenous settlement. It provides for the maintenance of a Queensland Heritage Register that records places of significance. Criteria for such places of significance are listed in the Act. The main objectives of the Act are to:

- provide for the establishment of Queensland Heritage Council;
- provide maintenance of a register of places of significance;
- regulate development of registered places;
- provide heritage agreements to encourage conservation of regulated places; and
- provide appropriate powers of protection enforcement.

The *Queensland Heritage Act 1992* is relevant to the Project in relation to any items or areas of cultural heritage that may be present on the Project site (Section 3.6).

### 5.3.20 Environmental Offsets Policy 2014 V1.1

The Queensland Government *Environmental Offsets Policy 2014 V1.1* (which replaces the *Biodiversity Offset Policy 2011 V1.0*) came into effect on 1 July 2014.

On 1 July 2014 a new environmental offsets framework was introduced in Queensland with the aim of streamlining the offsets process. The framework comprises of:

- *Environmental Offsets Act 2014*; and
- *Environmental Offsets Regulation 2014*.

The main purpose of the Environmental Offsets Framework is to counterbalance the significant residual impacts of particular activities on prescribed environmental matters through the use of environmental offsets. The framework thus applies where there is a significant residual impact of a prescribed activity (e.g. a resource activity carried out under an environmental authority under the EP Act for which an amendment application or a site-specific application was made under the EP Act) on a prescribed environmental matter (e.g. a MSES).



The Policy and framework can apply to mining activities under Chapter 5 of the EP Act, including the Project, should an approval be required in relation to an MSES. Where a prescribed activity (i.e. mining activity under Chapter 5 of the EP Act), will or is likely to have a significant residual impact on the MSES, an environmental offset condition may be imposed. The tests for determining significance are outlined in the *Queensland Environmental Offsets Policy – Significant Residual Impact Guideline* (DEHP, 2014d).

Consideration of environmental offset requirements will be made in accordance with the *Environmental Offsets Act 2014*.

### 5.3.21 Land Protection (Pest and Stock Route Management) Act 2002

The main purpose of the *Land Protection (Pest and Stock Route Management) Act 2002* (LP Act) is to provide for pest management for land and stock route network management. The LP Act is relevant to the Project with regard to the control and management of declared pest plant (weed) and animal species.

Some pest species listed under this Act are known to occur at the Project site, and therefore the legislation applies with regard to management and/or eradication of these species.

### 5.3.22 Regional Planning Interests Act 2014

The *Regional Planning Interests Act 2014*, and supporting *Regional Planning Interests Regulation 2014*, commenced in June 2014 with the aim of identifying and protecting areas of Queensland that are of regional interest. Overall the Act seeks to manage impact and support coexistence of resource activities and other regulated activities in areas of regional interest.

The Project does not require a Regional Interests Development Approval under the *Regional Planning Interests Act 2014* as it would not affect any areas of regional interest.

### 5.3.23 Other Potentially Relevant Legislation and Policy

Legislation that is potentially relevant to the Project but has not been listed as key legislation is described in Table 5-5 below.

**Table 5-5**  
**Other Potentially Relevant Commonwealth and Queensland Legislation**

<b>Other Commonwealth Legislation and Associate Subordinate Legislation</b>
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>
<b>Other Queensland Legislation and Associated Subordinate Legislation</b>
<i>Mineral and Energy Resources (Common Provisions) Act 2014</i>
<i>Aboriginal Land Act 1991</i>
<i>Forestry Act 1959</i>
<i>Coal Mining Safety and Health Act 1999</i>
<i>Land Act 1994</i>
<i>Transport Operations (Road Use Management) Act 1995</i>
<i>Explosives Act 1999</i>
• <i>Explosives Regulation 2003</i>
<i>Soil Conservation Act 1986</i>

**Table 5-5 (Continued)**  
**Other Potentially Relevant Commonwealth and Queensland Legislation**

<b>Other Queensland Legislation and Associated Subordinate Legislation</b>
<i>Work Health and Safety Act 2011</i>
<i>Building Act 1975</i>
<i>Water Supply (Safety and Reliability) Act 2008</i>
<i>Electricity Act 1994</i>
<i>Local Government Act 2009</i>
<i>Plumbing and Drainage Act 2002</i>

## **5.4 REQUIRED APPROVALS**

The key approvals and permits required for the Project are shown in Table 5-6.

## **5.5 PLANNING PROCESSES AND STANDARDS**

The SP Act establishes the framework for planning and development assessment in Queensland. Section 232(2) of the SP Act and Schedule 4 of the SP Regulation declares that activities authorised under the MR Act and all aspects of development for a mining activity to which an EA (mining activities) is required under the EP Act need not be assessed against a planning scheme.

The Project would include development beyond the extent of the ML boundaries, including closure of existing and construction of new local roads.

Regardless of the exemptions of the mining activities from the SP Act, the Queensland State Planning Policy and the Chinchilla and Murilla Shire Planning Schemes would be considered when conducting the environmental assessments for the Project.

**Table 5-6**  
**Key Project Approvals**

Requirement	Purpose	Applicable Act	Administering Authority/Parties
<b>Mining Approvals</b>			
Mining Lease	A ML is required to permit the undertaking of specified mining activities within the defined lease location.	<i>Mineral Resources Act 1989</i> , s245	DNRM
Environmental Authority (Mining Activities) and related documents, including: <ul style="list-style-type: none"> <li>– Plan of Operations</li> <li>– Financial Assurance</li> </ul>	The Project requires a major EA amendment. The Plan of Operations and Financial Assurance for the Cameby Downs Mine will be revised to incorporate the Project.	<i>Environmental Protection Act 1994</i> , s224	DEHP
<b>Water Approvals</b>			
Development Permit (Water Licence) to take or interfere with the flow of water on, under or adjoining any of the land  Riverine Protection Permit	Permits are required to advance sustainable management and efficient use of water.  Includes construction and use of environmental dams for the purpose of taking or interfering with water resources (e.g. overland water).	<i>Water Act 2000</i>  Water Resource (Condamine and Balonne) Plan 2004	DEHP  DNRM
<b>Native Title Approvals/Cultural Heritage Approvals</b>			
Preparation of: <ul style="list-style-type: none"> <li>– Written agreement with relevant Native Title claimants</li> <li>– Duty of Care Statement</li> <li>– CHMP</li> </ul>	When constructing the Project, all reasonable and practicable measures must be taken to ensure it does not harm Aboriginal cultural heritage. In support of the above Duty of Care, the preparation of a CHMP will be required. This is to be augmented by a Duty of Care Statement.	<i>Aboriginal Cultural Heritage Act (ACHA) 2003</i>	DEHP

**Table 5-6 (Continued)**  
**Key Project Approvals**

Requirement	Purpose	Applicable Act	Administering Authority/Parties
<b>Infrastructure Approvals</b>			
For off-mining lease infrastructure, Development Permits may be required for: <ul style="list-style-type: none"> <li>– Material Change of Use</li> <li>– Operational Works</li> <li>– Building Works</li> <li>– Plumbing and Draining Works</li> </ul>	Development permits may be required for Project infrastructure located off a ML under the <i>Sustainable Planning Act 2009</i> or associated planning scheme.	<i>Sustainable Planning Act 2009</i> <i>Murilla (Miles) Shire Planning Scheme</i> <i>Chinchilla Shire Planning Scheme</i> <i>Building Act 1975</i> <i>Building Regulation 2006</i> <i>Building Code of Australia 2008</i>	Western Downs Regional Council (WDRC) Queensland Government Department of State Development, Infrastructure and Planning
Approval to permanently or temporarily close a local government controlled road	A local government may close a road where it is necessary or desirable in the interests of public safety.	<i>Local Government Act 2009</i> , Part 3	WDRC
Alteration or Improvement of Roads (Licence)	A person (other than the local government) must not make an alteration or improvement to a local government road unless authorised by a licence.	Local Law 21 (Roads)	WDRC
Permit to Occupy (Permit)	A Permit to Occupy is required from the Chief Executive Officer where works or infrastructure are proposed to be located on unallocated state land; if located off the ML.	<i>Land Act 1994</i> , Chapter 4, Part 4	DNRM
Notification of works affecting electricity entity works	Where works would interfere with Ergon Energy's works (or other electricity entity's works).	<i>Electricity Act 1994</i> , s99	Ergon Energy
Temporary and Permanent Road Closures to facilitate Local Road Relocations (Permit)	Temporary/Permanent road reserve closure; Where an area of closed road is to be included into the adjoining land, a survey plan will be required.	<i>Land Act 1994</i> Road Closure Manual	DNRM

## 6 SCOPE OF ENVIRONMENTAL ASSESSMENT

This section describes the environmental assessments to be conducted to assess the potential impacts of the Project and the potential management measures to be implemented to prevent or minimise adverse impacts.

### 6.1 PRELIMINARY RISK ASSESSMENT

A preliminary risk assessment has been undertaken to identify the key environmental risks associated with the Project and involved the following steps:

1. **Identification of Potential Risks** – Consideration of how the Project is likely to affect the environmental values of the Project area.
2. **Identification of Key Potential Environmental Risks** – From the potential risks above, what are the key risks, considering the extent of the potential impacts; the nature of the potential impacts; and the potential impacts on ESAs.
3. **Preliminary Consideration of the Study Requirements** – Each of the key environmental risks identified above were considered with respect to the level and scope of assessment that will be required for the environmental due diligence assessments.

The key potential environmental risks identified by the preliminary risk assessment were:

- Surface water resources as a result of direct disturbance from open cut mining and site water management, including:
  - water quality impacts to receiving surface waters and downstream users;
  - changes to flooding characteristics;
  - geomorphological impacts to drainage features; and
  - impacts to aquatic ecology habitat.
- Impacts to sensitive receivers due to noise and dust emissions associated with mining activities.
- Terrestrial and aquatic ecology, including:
  - direct vegetation disturbance associated with land clearing; and
  - impacts to terrestrial and aquatic fauna habitat.
- Impacts to the community such as demand for housing and community resources.

The preliminary assessment of the key potential environmental risks included consideration of:

- the existing environment using sufficient baseline data;
- potential impacts of all stages of the Project;
- measures that could be implemented to avoid, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the Project; and
- contingency plans and/or adaptive management that could be implemented for managing any potentially significant residual risks to the environment.

Sections 6.2 to 6.7 provide further detail on the potential impacts on environmental values and management measures, and the scope of the environmental assessments to be conducted. Assessment of the key risks will be undertaken by recognised specialist consultants (i.e. surface water, air quality, noise and ecological studies).



## 6.2 LAND

### 6.2.1 Potential Impacts and Management Measures

The Project mining activities have the potential to directly and indirectly impact on the land resources and uses within the Project area, including:

- temporary change of use of land as a result of open cut mining activities and development of surface infrastructure (before the land is rehabilitated);
- permanent landform change through the formation of final voids;
- alteration of natural landscapes;
- impacts to soil health and condition; and
- impacts to the agricultural capacity of the land.

The natural landscape in the Project area will be altered through the formation of both in-pit and out-of-pit waste rock emplacements, final voids, tailings emplacements and flood levees.

The temporary change to land during mining operations will be managed through the rehabilitation of the majority of the site to a land use generally consistent with the existing land use. Riparian zones along the proposed creek diversions will be established to provide fauna habitat and stabilise the diversion corridors. Rehabilitation will be conducted progressively to achieve the final land use objectives.

Topsoil will be stripped, stockpiled and managed to minimise erosion potential and maintain the viability of the soil.

As described in Section 3.1, the Project is not considered to be located in a high value agricultural area, and no SCL is present within the Project area.

### 6.2.2 Environmental Assessment

An assessment of potential impacts to land will be conducted by Syntech to demonstrate how the Project will be managed to minimise the extent and severity of land disturbance and impact to existing land uses. The assessment will consider the staged development of the Project, progressive rehabilitation and proposed post-mining land use.

The assessment will also describe how the Project will be rehabilitated to ensure that following completion of mining activities, the site will be safe, stable and non-polluting and able to support the proposed post-mining land use.

Consideration will be given to the DEHP *Guideline (EM961) Application Requirements for Activities with Impacts to Land* (DEHP, 2014a) as part of the assessment to identify potential impacts to land and any improvements to existing management and mitigation measures at the Cameby Downs Mine.

In general the strategy to use predominantly in-pit emplacement of spoil, and where possible rejects, will continue to be used to minimise creation of out-of-pit spoil dumps and also the final void size. Rehabilitation will be conducted on a progressive basis.

## 6.3 WATER

### 6.3.1 Potential Impacts and Management Measures

The Project has the potential to impact environmental values identified for water resources through direct disturbance associated with open cut mining, diversion of drainage features and through release of water to the surrounding environment. Potential impacts could include:

- changes to surface drainage and flooding regimes;
- changes to the hydrology and geomorphology of drainage features through construction of diversions;
- localised effects on surface and groundwater quality;
- local depressurisation of the groundwater aquifers; and
- impacts to other water users in the region.

Development of open cut operations associated with the Project will alter the topography and drainage characteristics within the development footprint in a similar fashion to what has occurred through the currently approved operations.

The existing water management system will be progressively augmented to incorporate the Project, including construction of new water management infrastructure (e.g. sediment basins, water storage dams, flood levees, clean water and mine affected water diversions). The water management system will be designed to protect the identified environmental values by separating runoff from disturbed, rehabilitated and undisturbed catchments. The system will be operated to provide sufficient water storage capacity, to release water in accordance with the EA release conditions and to provide sufficient water during the life of the Project to minimise reliance on external water sources and protect the environmental values of the receiving environment.

Parts of the Columboola Creek and Punch-bowl Creek catchments will continue to be excised through development of the Project. The mine water management system will be expanded to accommodate the Project.

Diversion of Columboola Creek will result in a change in hydraulics and morphology along the diverted reach of the drainage feature.

Given the absence of alluvial aquifers within the Project area, excavation of the open cut at the existing Cameby Downs Mine has had a limited effect on shallow groundwater resources. Similarly, continuation of open cut mining is not expected to have a significant impact on shallow groundwater resources given the similar nature of the geology in the Project area. Groundwater use in the vicinity of the Project is limited as most groundwater bores have been installed within the coal measures resulting in extraction of poor quality water. As such, other groundwater users are not anticipated to be materially affected.

As described in Section 3.2, an extensive surface water and groundwater monitoring network has been established at the Cameby Downs Mine which includes automatic and manual surface water and groundwater level and quality monitoring stations. The monitoring network will be augmented as required to accommodate the Project. Consistent with the existing Cameby Downs Mine EA, Syntech will monitor:

- the quality of receiving surface water upstream and downstream of the Project;
- receiving surface water flow;

- the quality of external water supply from coal seam gas operations;
- mine affected release water quality and release rate during release events; and
- groundwater levels and quality.

It is anticipated that the water Model EA Conditions will be adopted through this EA amendment application, including development of a Receiving Environment Monitoring Program. The database of receiving water monitoring data collected from the automatic sampling stations will be used to develop site specific release limits and trigger levels for the Project. Until a sufficient dataset is available to prepare site specific criteria, Syntech will operate in accordance with interim criteria, to be established through consultation with DEHP.

Syntech will submit release monitoring data via the Queensland Government's Water Tracking and Electronic Reporting System.

### 6.3.2 Environmental Assessment

An assessment of potential impacts to water resources will be conducted by Syntech to demonstrate how the Project will be managed to protect the identified environmental values. A surface water assessment will be conducted, including:

- a description of the Project surface water management system;
- revision of the existing site water balance model;
- an assessment of potential impacts of any releases to the receiving environment;
- an assessment of potential flooding impacts, including consideration of a 1:1,000 AEP flood event;
- consideration of the EPBC Act water trigger; and
- conceptual design of the drainage feature diversions.

The surface water assessment will identify the chemical and physical properties of surface waters within the area that may be affected by the Project and assess the potential impacts of any releases (as determined by the revision of the site water balance model) on the quality and quantity of receiving waters. It is anticipated that there will be no significant changes to the potential impacts to receiving waters given Project water releases will be consistent with the existing release practices at the Cameby Downs Mine.

Changes to overland flow regimes (including changes to flooding characteristics) will be informed through the development of a hydrological model for the Project area. The hydrological model will also consider the requirement for, location and design principles for the drainage feature diversions. Flood levees and waste rock emplacements will be designed and constructed to provide 1:1,000 AEP flood protection of voids.

An assessment in accordance with the DEHP *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* (DEHP, 2016d) will be conducted for any new water management infrastructure. Any new release points associated with the new water management infrastructure will be described.

A groundwater assessment will also be conducted as part of the environmental assessments. It will:

- identify the chemical and physical properties of hydrogeological systems;
- include a numerical groundwater model;

- consider the EPBC Act water trigger; and
- predict potential impacts to groundwater levels and quality, groundwater users and associated impacts to surface water resources.

The existing site Water Management Plan will be revised to incorporate the Project.

Consideration will be given to the DEHP *Guideline (EM 963) Application Requirements for Activities with Impacts to Water* (DEHP, 2014e) during the development of the surface water and groundwater assessments to assist in identifying potential impacts to water resources and any improvements to existing management and mitigation measures at the Cameby Downs Mine.

## **6.4 BIODIVERSITY**

### **6.4.1 Potential Impacts and Management Measures**

Open cut mining activities and infrastructure development associated with the Project has the potential to directly disturb terrestrial and aquatic vegetation and fauna habitat. Mining activities also have the potential to introduce weeds and feral animals to the Project area.

Potential impacts to biodiversity will be minimised through avoidance of direct disturbance to ESAs, specifically the field-validated endangered RE (RE 11.4.3), through minimisation of clearance and mitigation such as rehabilitation of the Project area in accordance with rehabilitation objectives and offset and compensatory measures.

The existing surface disturbance protocols at the Cameby Downs Mine will continue to be used for the Project, including consideration of timing of land clearance, pre-clearance surveys, delineation of clearing areas and salvage of habitat features where practicable.

Existing weed and feral animal monitoring and management programs will continue to be implemented for the Project.

### **6.4.2 Environmental Assessment**

An environmental assessment of the potential impacts to terrestrial and aquatic biodiversity will be conducted to demonstrate how the Project can be managed to protect the identified biodiversity values. A terrestrial flora and fauna assessment and an aquatic ecology assessment will be conducted to assess the potential impacts to biodiversity associated with the Project, including consideration of:

- MSES;
- RE mapping;
- flora and fauna species within the Project area, particularly threatened species listed under the NC Act and EPBC Act;
- ESAs;
- wetlands;
- groundwater dependent ecosystems; and
- MNES.

The assessments will describe the proposed avoidance and mitigation measures to protect or enhance ecological values.

Consideration of biodiversity offset requirements will be included in the ecological assessments in accordance with the relevant Queensland and Commonwealth legislation and policies.

Consideration will be given to the *Queensland Environmental Offsets Policy*, the Commonwealth *EPBC Act Environmental Offsets Policy* and the *DEHP Guideline (EM961) Application Requirements for Activities with Impacts to Land* (DEHP, 2014a) during the development of the ecological assessments to identify management and mitigation measures.

## 6.5 AIR QUALITY

### 6.5.1 Potential Impacts and Management Measures

Open cut mining activities and the handling of spoil, ROM and product coal have the potential to generate particulate matter (i.e. dust) emissions in the form of:

- total suspended particulate matter (TSP);
- particulate matter with an equivalent aerodynamic diameter of 10 micrometres ( $\mu\text{m}$ ) or less ( $\text{PM}_{10}$ ) (a subset of TSP); and
- particulate matter with an equivalent aerodynamic diameter of 2.5  $\mu\text{m}$  or less ( $\text{PM}_{2.5}$ ) (a subset of TSP and  $\text{PM}_{10}$ ).

Exposure to small diameter suspended particulate matter (such as  $\text{PM}_{2.5}$ ) can result in adverse health impacts. The likely risk of these impacts to a person depends on a range of factors including the size, chemical composition and concentration of the particulate matter, and the existing health of the person. Particulate matter also has the potential to cause nuisance (amenity) effects when it is deposited on surfaces.

As described in the EPP (Air), air quality objectives are prescribed to enhance or protect environmental values. The EPP (Air) prescribes air quality objectives for TSP,  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$ , but does not prescribe air quality objectives for deposited dust. DEHP's *Guideline (ESR/2016/1936) Model Mining Conditions* (DEHP, 2016e) prescribe that a mining activity can not result in an exceedance of 120 milligrams per square metre per day ( $\text{mg}/\text{m}^2/\text{day}$ ) of deposited dust, averaged over one month, at a sensitive place. The air quality objectives for the indicators relevant to the Project are presented in Table 6-1.

**Table 6-1**  
**Air Quality Objectives Relevant to the Project**

Indicator	Source	Environmental Value	Averaging Period	Criteria
TSP	EPP (Air)	Health and wellbeing	1 year	90 $\mu\text{g}/\text{m}^3$
$\text{PM}_{10}$	EPP (Air)	Health and wellbeing	24 hours	50 $\mu\text{g}/\text{m}^3$
$\text{PM}_{2.5}$	EPP (Air)	Health and wellbeing	24 hours	25 $\mu\text{g}/\text{m}^3$
	EPP (Air)	Health and wellbeing	1 year	8 $\mu\text{g}/\text{m}^3$
Deposited dust	Model Mining Conditions	Amenity	1 month	120 $\text{mg}/\text{m}^2/\text{day}$

$\mu\text{g}/\text{m}^3$  = micrograms per cubic metre.

The low sulphur content of Australian diesel, in combination with widely dispersed mining equipment over mine sites, is such that the air quality objectives for sulphur dioxide described in the EPP (Air) will not be exceeded. Similarly, nitrogen dioxide and carbon monoxide emissions from diesel combustion will be limited and widely dispersed. Accordingly, the air quality objectives for these indicators are not considered relevant to the Project.



The Project has the potential to increase the existing level of air quality impacts associated with the Cameby Downs Mine, particularly where operations will be in closer proximity to nearby sensitive receivers. Sources of dust emissions that have the potential to elevate dust levels include:

- ground disturbance associated with vegetation clearance;
- topsoil, spoil and ROM coal extraction, transport and handling;
- topsoil, spoil and ROM coal stockpiling (wind erosion);
- wind erosion of disturbed (yet to be rehabilitated) areas; and
- product coal handling and stockpiling.

To minimise potential impacts to air quality, the following measures have been implemented by Syntech at the Cameby Downs Mine, and would continue to be implemented as part of the Project:

- progressive rehabilitation of waste rock emplacements;
- dust suppression (watering) of haul roads, ROM and product coal stockpiles and transfer points; and
- blast management measures.

Open cut mining activities associated with the Project will result in emissions of greenhouse gases through:

- fugitive coal seam gas emissions from open cut;
- combustion of diesel fuels in mining plant and equipment; and
- explosives use at the Project.

Indirect greenhouse gas emissions are also associated with the Project through electricity consumption and emissions associated with the transport of product coal.

Syntech will monitor and manage greenhouse gas emissions through its participation in the Commonwealth Government's *National Greenhouse and Energy Report System* (NGERS). Under NGERS requirements, relevant sources of greenhouse gas emissions and energy consumption must be measured and reported on an annual basis, allowing major trends in emissions/energy consumption to be identified.

### **6.5.2 Environmental Assessment**

The potential air quality impacts associated with the Project will be predicted through an Air Quality Assessment. The Air Quality Assessment will include consideration of the topography and meteorological conditions at the Project and the sources of air quality emissions associated with the proposed mining and material handling activities.

An air dispersion model will be prepared to predict the potential air quality impacts at nearby sensitive places. The results of the modelling will inform the monitoring and management measures to be implemented to achieve compliance with the relevant air quality criteria.

Consideration will be given to the DEHP *Guideline (EM 960) Application Requirements for Activities with Impacts to Air* (DEHP, 2015) during the development of the Air Quality Assessment to identify any additional management and mitigation measures.

## 6.6 NOISE AND VIBRATION

### 6.6.1 Potential Impacts and Management Measures

Noise and vibration sources associated with the Project include:

- operational noise from mobile and fixed plant equipment;
- train and vehicle noise; and
- blast vibration and airblast overpressure.

On the southern boundary of the Project and adjacent to ML 50233 is the Warrego Highway and Western Railway Line which present significant noise sources to the surrounding area and sensitive receivers. Additionally the establishment of the coal seam gas sector in the Surat Basin has seen additional noise sources created both within the Project area and in the surrounding region.

Noise associated with the Project has the potential to adversely affect sensitive receivers that surround the Project site. Based on the current Project scope it is not expected that the operational noise will significantly increase, given the proposed changes to mobile equipment (larger capacity and additional fleet items) and the CHPP are considered minor, and the mining methodologies would be consistent with the existing Cameby Downs Mine.

Cameby Downs Mine operates under a noise management program, which is based on real time data collected from multidirectional noise monitors. These measure sound levels and audio recordings, and are located on the boundaries of the operational areas. The noise management program runs as a three stage alarm (or 'traffic light') system which is triggered by noise levels at the monitors with the addition of a peak noise alarm to appropriately manage noise levels of the operation.

The system utilises a preventative approach by which green, amber and red alarms are triggered based on noise levels nearing EA limits, and at 15 minute time intervals. This allows production personnel to action a response, which may include changes to operations and location of equipment or monitoring and recording noise source if it is external to the mine. Records from each event are reviewed regularly to assist in developing improved noise management measures.

Blast activities are managed by ensuring these activities are conducted during daylight hours only, specifically between 6.00 am and 6.00 pm. The site maintains blasting procedures which have been developed in accordance with Australian Standard (AS) 2187.2:2006 *Explosives – Storage and Use Part 2: Use of Explosives*.

Sensitive receivers and the community are encouraged to utilise the "1800" community liaison telephone service, during events where they feel noise generated by the mine is impacting them adversely. All calls are responded to according to the Community Engagement Management Plan.

### 6.6.2 Environmental Assessment

In 2014 Cameby Downs Mine commissioned Advitech to undertake a detailed noise and vibration assessment study for the Cameby Downs Mine, with the purpose of enhancing the current noise management system and improving on previous noise assessments undertaken for the site. Additionally, a noise model is being developed which will facilitate the understanding of noise impacts from the site as the mine expands over time, and assist in determining noise mitigation measures.

Works undertaken to date include:

- monitoring and review of the ambient noise environment adjacent to the Cameby Downs Mine site;
- operator attended noise monitoring;
- development of a detailed noise model, to assist with:
  - quantifying the contribution(s) from different noise generating activities onsite;
  - understanding the potential variation in received noise levels that may be associated with changes in meteorological or operational conditions;
  - subsequent quantification of benefits that may be derived following implementation of specific operational noise controls; and
  - establishment of appropriate controls as part of a Noise Management Protocols for the Cameby Downs Mine;
- integration of information contained within the Protocols, to assist with the operation of the real time noise monitoring program that effectively facilitates near-real time feedback to operations staff; and
- development of a Site Noise Management Plan.

The study was conducted in accordance with relevant guidelines and regulatory requirements including the EPP (Noise), DEHP *Guideline (EM2371) Planning for Noise Control* (DEHP, 2016f) and the DEHP (2013) *Noise Measurement Manual (EM1107)*.

The study and model will also assist in further investigations, for example modelling scenarios to predict noise level emissions from the Project at various time intervals during the Project life.

## 6.7 OTHER CONSIDERATIONS

### 6.7.1 Socio-economic

The Cameby Downs Mine is a significant employer within the region and supports a large direct and indirect population. The Project will provide continued employment for the existing workforce for the life of the Project, provide additional employment opportunities (approximately 20 additional personnel), as well as the indirect benefits the Cameby Downs Mine will continue to provide for the region.

Potential impacts to the community such as the demand for housing and community resources are not expected to increase as a result of the Project, given the proposed increase to the existing workforce is considered modest.

## 6.7.2 Cultural Heritage

### *Non-Indigenous Heritage*

An independent Non-Indigenous Heritage Assessment was undertaken by Converge Heritage and Community Pty Ltd in 2010 to evaluate non-indigenous heritage values within the Project area. This study identified five sites with local non-indigenous heritage significance. A search of the statutory registers associated with national, state and local legislation for non-indigenous heritage yielded no sites in the area.

Syntech will survey the parts of the Project area not covered during the 2010 study prior to disturbance by the Project.

All five sites with local heritage significance lie within the open cut extent and will be, or are highly likely to be, directly impacted by the Project.

The impacts predicted to places of non-indigenous cultural heritage identified to have local significance are described in Table 6-2.

A more detailed non-indigenous heritage study will be conducted on the sites of local heritage significance to inform if further mitigation strategies are required. Mitigation strategies will be developed for sites of local heritage significance, such as relocation of the wool press.

**Table 6-2**  
**Summary of Project Impacts to Non-Indigenous Cultural Heritage Sites**

Name	Significance	Impact Assessment
World War II Ammunition Dump	Local	Lies within pit development area (direct impact)
Wool Press	Local	Lies within pit development area (direct impact)
Avon Downs Homestead Complex	Local	Lies within pit development area (direct impact)
Alexander Downs Homestead Complex	Local	Lies within pit development area (direct impact)
Cameby Downs Homestead Complex	Local	Lies within pit development area (direct impact)

### *Indigenous Cultural Heritage*

CHMPs were formed with the Barunggam Endorsed Parties and the Western Wakka Wakka Aboriginal Parties, respectively. The CHMPs incorporate the Project and clearly define how the Project will be managed to avoid or minimise harm to Aboriginal cultural heritage.

Consultation is ongoing with the abovementioned parties. Syntech will continue to engage with the above parties to conduct cultural heritage surveys over the Project site and infrastructure areas. The surveys will be conducted in accordance with the CHMPs ahead of any disturbance in the Project area. Any potential impact to indigenous cultural heritage will be managed in accordance with the CHMPs.

In a hierarchy of cultural heritage management options, the first and best strategy is to avoid impact on sites. However, given that the majority if not all sites will be or are likely to be directly impacted by the Project, relevant mitigation measures described in the CHMPs will be implemented.

These measures will be informed by the relevant subject matter expertise and stakeholders. This will involve liaison with the Barunggam and the Western Wakka Wakka Aboriginal parties, in accordance with the signed CHMPs.

Surveys and mitigation of indigenous cultural heritage will be conducted ahead of any disturbance in accordance with the CHMPs.

### **6.7.3 Visual Amenity**

The visual character of the Project area and surrounds reflects the existing agricultural and mining land uses and remnant vegetation found along property boundaries, fence lines and uncleared areas.

The development of additional out-of-pit waste rock emplacements, rejects dams, haul roads and associated vegetation clearing will alter the visual landscape of the Project area similar to the impacts associated with the existing operation. However, given the generally flat topography and existing dense vegetation surrounding the Project, it is anticipated that potential impacts on visual amenity at private dwellings associated with the Project will not be significant.

The Project will be visible from parts of the road network around the Project, particularly where vegetative screening is limited and where the roads are located in elevated positions. Although the Project will result in a change in visual appearance from these locations, the viewer sensitivity from the road network is not considered to be high, and as such, potential impacts are not considered to be significant.

A Visual Assessment will be conducted to assess the potential visual impacts to private dwellings and public locations associated with the Project.

### **6.7.4 Road Transport**

A number of local roads within the Project footprint will be closed due to expansion of the open cut mining operations, namely parts of Grahams Road, Boort-Koi Road and Ryalls Road. Impacts associated with the closure of the local roads will be mitigated through the construction of new roads to the west and northeast of the Project (within existing unformed road easements) to provide continued local access around the Project.

Given the proposed change to the number of operational employees/contractors is considered modest, it is expected that there would not be any significant change to the current road transport impacts associated with Project workforce and delivery vehicle movements.

### **6.7.5 Waste Management**

Given the relatively minor proposed increases to the mining rate and number of employees associated with the Project, it is not expected that annual non-mining waste volumes will increase significantly for the Project. Accordingly, it is anticipated that the existing waste management practices employed at the Cameby Downs Mine will be suitable for the Project.

#### ***Waste Management Plan***

The Cameby Downs Mine has a Waste Management Plan (Waste MP) which aims to reduce potential health and environmental hazards which may occur from waste generation and disposal. Disposal of waste is to be considered when no other economically feasible option for reuse or treatment exists. The disposal method will seek to minimise environmental effects and the potential for land contamination.

The Waste MP is structured on the following principles of waste management, listed in priority:

- *Waste reduction or prevention:* All efforts are made to reduce the amount of waste produced onsite;
- *Waste reuse:* Where practical, particular waste products may be reused onsite for other purposes;
- *Waste recycling:* Waste products that cannot be reused onsite are sorted and packaged for transport to a waste recycling facility, which is licensed to receive such waste.
- *Waste treatment and appropriate disposal:* The disposal option is a last resort, which involves either disposal to the onsite landfill or to an approved landfill off-site.

In addition to the disposal of waste tyres in-pit, Syntech proposes to dispose of additional benign, non-putrescible waste (e.g. pallets and air filters) in-pit as part of the Project. Disposal methods for such waste will be detailed in the Waste MP.

The Waste MP will be reassessed to encompass the entire Project and included as part of the Project's Plan of Operations.

Syntech has committed to the review of the Waste MP with each subsequent Plan of Operations amendment (currently undertaken every three years). This process will allow continual review and improvement of issues addressed in the Waste MP, as well as allowing for new actions to be implemented.

### ***Waste Minimisation and Cleaner Technology***

The Cameby Downs Mine currently employs a number of waste minimisation and clean technology initiatives and will continue to pursue cleaner production ideals, including:

- *Water Efficiency* – The Water supply system currently utilised by the Cameby Downs Mine includes water reclaimed from rejects pumping, rainfall run-off and water pumped to the site from a nearby coal seam gas operation. Run-off from construction areas, process areas, haul roads, mine pits, spoil areas and any other disturbed areas is directed to storage facilities for water re-use.
- *Production Processes* – Syntech continually investigates opportunities to improve the efficiency of resource use and this would continue through the Project. Currently, approximately 77% of the process water is returned for re-use in the CHPP.
- *Waste Minimisation* – Strategies to minimise waste generation, handling and disposal are standardised and documented in the Waste MP. As an example, Cameby Downs Mine has implemented a number of initiatives to minimise tyre wear and damage, thereby minimising the number of tyres to be disposed.

### **6.7.6 Geochemistry**

The majority of waste rock excavated and managed at the Cameby Downs Mine to date has been assessed as non-acid forming, with only approximately 1% of spoil material expected to be potentially acid forming (PAF).



An assessment of the geochemical characteristics of waste rock and rejects will be conducted as part of the environmental assessment. The assessment will confirm the geochemical characteristics of waste rock and rejects and identify appropriate management and monitoring measures. The results will be used to inform the surface water and groundwater assessments. It is anticipated that the waste rock to be excavated and managed as part of the Project will have similar geochemical characteristics to the material encountered at the Cameby Downs Mine to date.

Consistent with current practices, sampling of waste rock ahead of mining will be conducted to identify areas that contain PAF material and appropriate handling and disposal methods will be developed. Water quality monitoring of sediment dams, rejects dams and mine water storage dams will continue to be conducted to identify whether the management of PAF material is appropriate.

### **6.7.7 Hazards and Safety**

This section of the report outlines potential impacts and/or risks that the Project may impose on the health and safety of the Project workforce and community.

Mitigation strategies are discussed to reduce the potential risks to satisfactory levels.

#### ***Risks to Persons***

Health and safety impacts associated with the Project, that may potentially affect the Project workforce and community, are identified as follows:

- operational hazards of the Project to employees;
- air quality impacts from the operations arising from dust emissions;
- noise and vibration impacts from the Project;
- transportation safety for the workforce including driver fatigue;
- water quality impacts from the release of waste or stormwater contaminants from the Project; and
- human health risks from contaminated land.

#### ***Operational Risks to Persons***

Operational risks to persons at the Project, which result from the above, will be managed through the Safety and Health Management System (SHMS). All personnel entering the Cameby Downs Mine must complete the necessary inductions and have medical clearance to be fit for work.

Safety risks to persons at the Cameby Downs Mine are not expected to increase as a result of the Project as the increases in equipment and personnel numbers are considered modest.

#### ***Air Quality***

Dust is the primary air pollutant to be emitted from the Project, consistent with the majority of open cut coal mines. An air quality assessment conducted in 2012 identified that the majority of dust from mining activities associated with the Cameby Downs Mine consists of coarse particles and particles larger than PM<sub>10</sub>, generated from activities such as mechanical disturbance of rock and soil materials by shovel, bulldozing, blasting, and vehicles on dirt roads. Particles are also generated when wind blows over bare ground and different types of stockpiles.

A number of strategies to minimise dust impacts have been implemented at the Cameby Downs Mine. Further details on air quality are discussed in Section 6.5.

### *Noise and Vibration*

Noise and vibration created as a function of the Project includes:

- operational noise from mobile equipment;
- train noise; and
- blast vibration and airblast overpressure.

Cameby Downs Mine has implemented a stringent noise management system, that utilises three multi-directional noise monitors which provide 24 hour monitoring and real time noise levels. In combination with the monitors, an internal noise management system implements a multistage alarm warning system based on preventative measures that accounts for external noise sources and meteorological conditions. Further detail of noise management can be found in Section 6.6.

### *Road Safety*

Significant traffic increases to and from the Project are not expected with the proposed modest increase to workforce numbers.

Driver fatigue is currently managed through the SHMS, through Fatigue Management policies. In addition, bus transport is provided to the Project workforce and will continue through the Project.

### *Water Quality*

Water management is described in Sections 4.5 and 6.3. With the implementation of the site Water Management Plan and Operational Water Plan, there are not anticipated to be any health and safety impacts associated with water contamination.

### *Contaminated Lands*

An investigation of historical records as part of the Preliminary Site Visit, conducted on the Project site as part of a Land Contamination Assessment (AARC, 2013b) to identify potential sources of contamination, has identified one sheep dip on Lot 16 on plan RP187207 within the Project open cut footprint. This has resulted in localised soil contamination including concentrations of Arsenic, Chromium and Dieldrin which were recorded during preliminary soil sampling and analysis. Arsenic exceeded National Environmental Protection Measures (NEPM), Health-based Investigation Levels and Dieldrin, often used to complement DDT, exceeded NEPM Environmental-based Investigation Levels.

The sheep dip site is currently not occupied by humans or grazed by livestock making the risk of exposure unlikely until soil disturbance occurs as part of mining construction. While the site remains undisturbed the risk of exposure to the contaminated soil through these processes is low. For the purpose of health and safety, the contaminated land at the sheep dip will be remediated prior to soil disturbance (construction phase), in addition, the effective management of the contaminated soil will ensure that the future risk of exposure to sensitive receptors becomes unlikely.

### ***Safety Health Management System***

A Safety and Health Management Plan (SHMP) is in place at the Cameby Downs Mine, which applies to all activities related to the coal mining and processing operations throughout the Cameby Downs Mine. The aim of the SHMP is to advocate the SHMS and to maintain a consistently high standard of safety performance with improvements identified and implemented in an endeavour to achieve best practice. The SHMP will be revised to incorporate the Project where required.

The SHMS facilitates a risk based assessment and is managed by key performance indicators promoting the safety and health of all persons who may be affected by Project activities.

The SHMS aims to appropriately identify, assess, evaluate and control all workplace hazards and associated risks. To promote the health and safety of the Project workforce Standard Operating Procedures, SHMS Procedures, and Standard Work Instructions will be developed through consultation with the workforce.

Activities with less risk are managed by conducting a Job Safety Analysis which requires the supervisor and a team of workers conducting an activity to list the tasks or steps involved in performing the activity.

In addition, Syntech is committed to providing a safe workplace and protecting the health of all employees, contractors and visitors. To achieve this objective, monitoring and testing of specific health hazards are conducted to ensure the effectiveness of controls that have been implemented to reduce risk to a level as low as reasonably achievable.

## 7 ENVIRONMENTALLY RELEVANT ACTIVITIES AND NOTIFIABLE ACTIVITIES

### 7.1 ENVIRONMENTALLY RELEVANT ACTIVITIES

Under section 19A of the EP Act, the mining activity authorised by the EA is taken to be comprised of the ancillary activities (being activities carried out under the EA as part of a resource activity which are also a prescribed ERA), as well as the other activities carried out under the EA as a resource activity.

The ancillary activities are taken to be resource activities for the purpose of the EA amendment application.

Syntech acknowledges that the ancillary activities are taken to be prescribed ERAs for the purposes of the power to impose conditions on the EA under Chapter 5, Part 5, Division 6 of the EP Act and the fees that apply to the EA under the EP Act.

Table 7-1 describes the resource activity the subject of the current EA for the Cameby Downs Mine, and Table 7-2 describes the relevant ancillary activities/prescribed ERAs.

These activities will remain the same within the additional MLAs of the Project and no changes are expected as part of this application.

**Table 7-1  
Resource Activity and the Aggregate Environmental Score**

Environmentally Relevant Activity	Aggregate Environmental Score
13 Mining Black Coal	128

**Table 7-2  
Prescribed ERAs Associated with the Project**

Environmentally Relevant Activity	Threshold	Aggregate Environmental Score
Chemical Storage	Storing >50 tonnes (t) of chemicals of dangerous goods class 1 or 2	51
Fuel burning	Fuel burning >500 kilograms per hour	35
Mineral Processing	Mineral processing >100,000 tonnes per year (t/yr)	280
Surface Coating	Surface coating: anodising, electroplating, enamelling or galvanizing using >1,000 but <10,000 t/yr of surface coating materials	41
Regulated Waste Storage	Receiving and storing regulated waste	21
Waste Disposal	Operating a waste disposal facility (any combination of regulated waste, general waste and limited regulated waste – and <5 t untreated clinical wastes if in a scheduled area): <50,000 t/yr	50
Sewage Treatment Plant	Treatment plant for 100-1500 equivalent persons with effluent discharged through an irrigation scheme	27

## 7.2 NOTIFIABLE ACTIVITIES

Notifiable activities as described under Schedule 3 of the EP Act 1994 that would be carried out for the Project are listed below. These activities are carried out at the existing Cameby Downs Mine and will continue to be the same in the new MLAs and no changes are expected.

- Notifiable Activity 6 – Chemical Manufacture or Formulation – manufacturing, blending, mixing or formulating chemicals if:
  - the chemicals are designated dangerous goods under the dangerous goods code; and
  - the facility used to manufacture, blend, mix or formulate the chemicals has a design production capacity of more than 1 t per week.
- Notifiable Activity 7 – Chemical storage (other than petroleum products or oil under item 29), storing more than 10 t of chemicals (other than compressed or liquefied gases) that are dangerous goods under the dangerous goods code.
- Notifiable Activity 20 – Landfill, disposing of waste (excluding inert construction and demolition waste).
- Notifiable Activity 24 – Mine wastes:
  - (a) storing hazardous mine or exploration wastes, including, for example, tailings dams, overburden or waste rock dumps containing hazardous contaminants; or
  - (b) exploring for, or mining or processing, minerals in a way that exposes faces, or releases groundwater, containing hazardous contaminants.
- Notifiable Activity 29 - Petroleum product or oil storage, storing petroleum products or oil:
  - (a) in underground tanks with more than 200 litre (L) capacity; or
  - (b) in above ground tanks with:
    - (i) for petroleum products or oil in class 3 in packaging groups 1 and 2 of the dangerous goods code—more than 2,500 L capacity; or
    - (ii) for petroleum products or oil in class 3 in packaging groups 3 of the dangerous goods code—more than 5,000 L capacity; or
    - (iii) for petroleum products that are combustible liquids in class C1 or C2 in AS 1940:2004 *The storage and handling of flammable and combustible liquids* published by Standards Australia—more than 25,000 L capacity.
- Notifiable Activity 33 - Scrap yards, operating a scrap yard including automotive dismantling or wrecking yard or scrap metal yard.

## **8 STAKEHOLDER ENGAGEMENT**

A community consultation program has been implemented at the Cameby Downs Mine since 2012 to keep the community informed about key developments associated with the Project and to collect and analyse information about those social and cultural issues that are likely to have the most pronounced impacts.

### **8.1 COMMUNITY REFERENCE GROUP**

The CRG has been successfully operating since 2010 and includes representation by a number of stakeholders. The group meets quarterly and is facilitated by Cameby Downs Mine staff. CRG members were chosen from a broad cross-section of people representing the towns of Chinchilla and Miles, and adjoining areas. These include representatives of Chambers of Commerce, members of the local community and Syntech.

The aims of the CRG are:

- through CRG members, to keep communities in the vicinity of Cameby Downs Mine fully informed of activities and developments pertaining to the existing Cameby Downs Mine and the Project;
- to act as a community 'sounding board' for Syntech and the Cameby Downs Mine to receive early advice on any issues or concerns that arise; and
- to develop a framework for Cameby Downs Mine to identify and prioritise local projects and activities suitable for community funding assistance.

The CRG also administers the Cameby Downs Community Investment Program (CIP), which provides sponsorship opportunities for charitable purposes in the Chinchilla and Miles regions.

Regular updates on the Project have been presented to the CRG during the quarterly meetings. The results of the environmental assessment and stakeholder engagement will be presented to the CRG during 2017.

### **8.2 COMMUNITY ENGAGEMENT**

Community engagement is managed by the Cameby Downs Mine Environment Department and the Operations Manager, overseeing all stakeholder integration and communication processes. The Environment Department is responsible for implementing, monitoring, evaluating and reporting issues relating to community relations.

### **8.3 GENERAL COMMUNICATION**

Transparent and regular liaison is the cornerstone of Cameby Downs Mine ongoing stakeholder engagement strategy. To facilitate this approach and to meet its community relation objectives, Cameby Downs Mine employs the following broad communication tools.

#### ***1800 Number***

Cameby Downs Mine has a toll-free number, available 24 hours a day, seven days a week allowing stakeholders to place a complaint or concern with an answering service. An email alert is generated automatically from the service and forwarded to relevant Cameby Downs Mine staff.



### ***Enquiries and Complaints Management Process***

An enquiries and complaints process was established early in 2011 to respond to stakeholders' complaints and concerns about any operational procedures or issues relating to the existing Cameby Downs Mine or the Project. It is anticipated that this process, whereby stakeholders can call the Project 1800 number any time of the day or night, will continue for the life of the mine.

### ***Notifications***

For specific land access, traffic management or other notification requirements, Cameby Downs Mine will provide written communication directly to affected stakeholders.

### ***Local Media***

All notification information, as above and including CIP sponsorship opportunities, will be advertised through local media outlets to ensure appropriate stakeholder reach.

### ***Site Tours and Events***

Tours of the Project will be conducted for key stakeholder groups to provide firsthand information. Tours will be held on a regular basis and will be tailored for each individual tour group (i.e. landholders, local government, schools and broader community members).

Various major events will also be held to support Syntech's commitment to integrating with community life. These may include family fun days, charity events and support of existing community celebratory initiatives.

## 9 REFERENCES

- AARC (2013a) *Cameby Downs Expansion Project Terrestrial Flora and Fauna Assessment*.
- AARC (2013b) *Cameby Downs Expansion Project Land Contamination Assessment*.
- Australasian Groundwater & Environmental Consultants (2013) *Groundwater Impact Assessment Cameby Downs Expansion Project*.
- Bureau of Meteorology (2016) *Climate Data Online*. Website: <http://www.bom.gov.au/climate/data/>  
Date accessed: 11 July 2016.
- Converge Heritage and Community (2010) *Non-Indigenous Cultural Heritage Assessment, Cameby Downs Expansion Project*.
- Department of the Environment (2013) *Maps: Australia's bioregions (IBRA)*.
- Department of the Environment (2014) *EPBC Act Protected Matters Database Report*.
- Department of Environment and Heritage Protection (2013) *Noise Measurement Manual (EM1107)*, Version 4.
- Department of Environment and Heritage Protection (2014a) *Guideline (EM961) Application Requirements for Activities with Impacts to Land*, Version 2.
- Department of Environment and Heritage Protection (2014b) *Guideline (ESR/2016/1875) Rehabilitation Requirements for Mining Resource Activities*, Version 2.
- Department of Environment and Heritage Protection (2014c) *Guideline: Triggers for Environmental Impact Statements (EIS) under the Environmental Protection Act 1994 for Mining and Petroleum Activities*.
- Department of Environment and Heritage Protection (2014d) *Queensland Environmental Offsets Policy – Significant Residual Impact Guideline*.
- Department of Environment and Heritage Protection (2014e) *Guideline (EM963) Application Requirements for Activities with Impacts to Water*, Version 2.
- Department of Environment and Heritage Protection (2015) *Guideline (EM960) Application Requirements for Activities with Impacts to Air*, Version 3.
- Department of Environment and Heritage Protection (2016a) *Environmentally Sensitive Areas – Mining Activities*.
- Department of Environment and Heritage Protection (2016b) *Wetland Info: Maps and Data*.  
Website: <http://wetlandinfo.ehp.qld.gov.au/wetlands/facts-maps/>.
- Department of Environment and Heritage Protection (2016c) *Guideline (ESR/2016/1934) Structures which are dams or levees constructed as part of environmentally relevant activities*, Version 7.
- Department of Environment and Heritage Protection (2016d) *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*, Version 5.

Department of Environment and Heritage Protection (2016e) *Guideline (ESR/2016/1936) Model Mining Conditions*, Version 6.

Department of Environment and Heritage Protection (2016f) *Guideline (EM2371) Planning for Noise Control*, Version 1.

Department of Minerals and Energy (1995) *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland*.

Katestone Environmental (2013) *Air Quality Impacts Assessment of the Cameby Downs Expansion Project*.

Neldner, V.J., Wilson, B.A., Thompson, E.J. and Dillewaard, H.A. (2012) *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland*. Version 3.2. Updated August 2012. Queensland Herbarium, Queensland Department of Science, Information Technology, Innovation and the Arts, Brisbane.

Queensland Government (2014) *Queensland Environmental Offsets Policy*.