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Town Planning Report

Material Change of Use for a Public Utility (Power Station and associated infrastructure including Substation, and Access Roads), Hazardous Chemical Facility and Environmentally Relevant Activities.

Code Assessment

MONKLANDS ROAD, HOBARTVILLE

December 2019

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

C.J.Feltham Pty Ltd has been commissioned by Waratah Coal Pty Ltd, to prepare a town planning report to accompany an application for Material Change of Use for a *Public Utility (Power Station and associated Infrastructure).* The use also Triggers Assessable Development for a Hazardous Chemical Facility and Environmentally Relevant Activities which require Referral to DSDMIP.

The application relates to land located 30km north-west of Alpha and is described as Lot 2 on SP136836.

The project is located within the local government area of Barcaldine Regional Council and is covered by the Jericho Planning Scheme.

The proposal involves development of a 1,400 Megawatt (MW) ultra-supercritical (HELE — High Efficiency Low Emissions) Power Station adjacent to the Galilee Coal Project and will have the dual purpose of servicing the public network and proving the power needs for the Galilee Coal Project mine operations. Whilst the Power Station is linked to the proposed mine, and would not proceed without the mine, the application does not form part of the draft Environmental Authority (EPML00571313)for the Galilee Coal Project and as such a separate approval process is required under the *Planning Act 2016* and the associated Regulations and Acts. Similarly, associated linear infrastructure such as the high voltage transmission lines do not form part of this application.

The subject site is currently used for cattle grazing. The impact of the development on the existing environment is discussed in detail in this report and the following specialist reports;

- **Air Quality Assessment** prepared by Katestone (**Appendix A**)
- **Noise Impact Assessment** prepared by Acoustics RB Pty Ltd (**Appendix B**)
- **Fauna Assessment** prepared by Austecology (**Appendix C**)
- **Traffic Assessment** prepared by GTA Consultants Pty Ltd (**Appendix D**)
- **Preliminary Hazard Assessment prepared by Phronis** (**Appendix E**)

The purpose of this report is to carry out an assessment of the proposal against the applicable Local and State planning instruments. The report begins with an overview of the site and a description of the proposal. This is followed by a detailed assessment of the relevant assessment benchmarks prescribed in the State planning instruments and the Local planning instruments.

The report concludes with a discussion on the overall compliance with those planning instruments. It is considered that there are sufficient grounds to warrant approval of the application based on the following points:

- The proposed public utility will provide a modern and efficient power plant that will allow the replacement of older plants, resulting in environmental benefits such as a reduction in greenhouse gases (Katestone Assessment Report)

- The project has been located close to high energy users in the Galilee Basin and close to the raw supply of coal needed for the Power Station
- The project will provide local reinforcement to the existing power supply
- The project will provide a long term stable, affordable power supply for the network operating on a 24/7 basis; underwriting energy intensive industry such as minerals processing and LNG export
- The project will provide local jobs as well as a $1.3 billion increase in real income and $14Bn increase in real economic output into the Barcaldine Regional Council LGA
- The construction and operation phase will be appropriately managed to ensure negative impacts to the surrounding environment and community are minimised
- The specialist reports forming part of this application have determined that the project would not cause significant adverse impacts on the local area with the appropriate mitigation measures that have been identified
- The proponent intends that, when commissioned, the Galilee Power Project will be the cleanest coal fired power station, measured by any key emissions metrics (CO_2, SOx, NOx, PM10, $PM_{2.5}$), in Australia
- The proponent intends to offer its clients (at cost) carbon offsets sufficient to allow the client to choose to purchase certified carbon neutral power.

The location of the site is given in **Figure 1**, below.

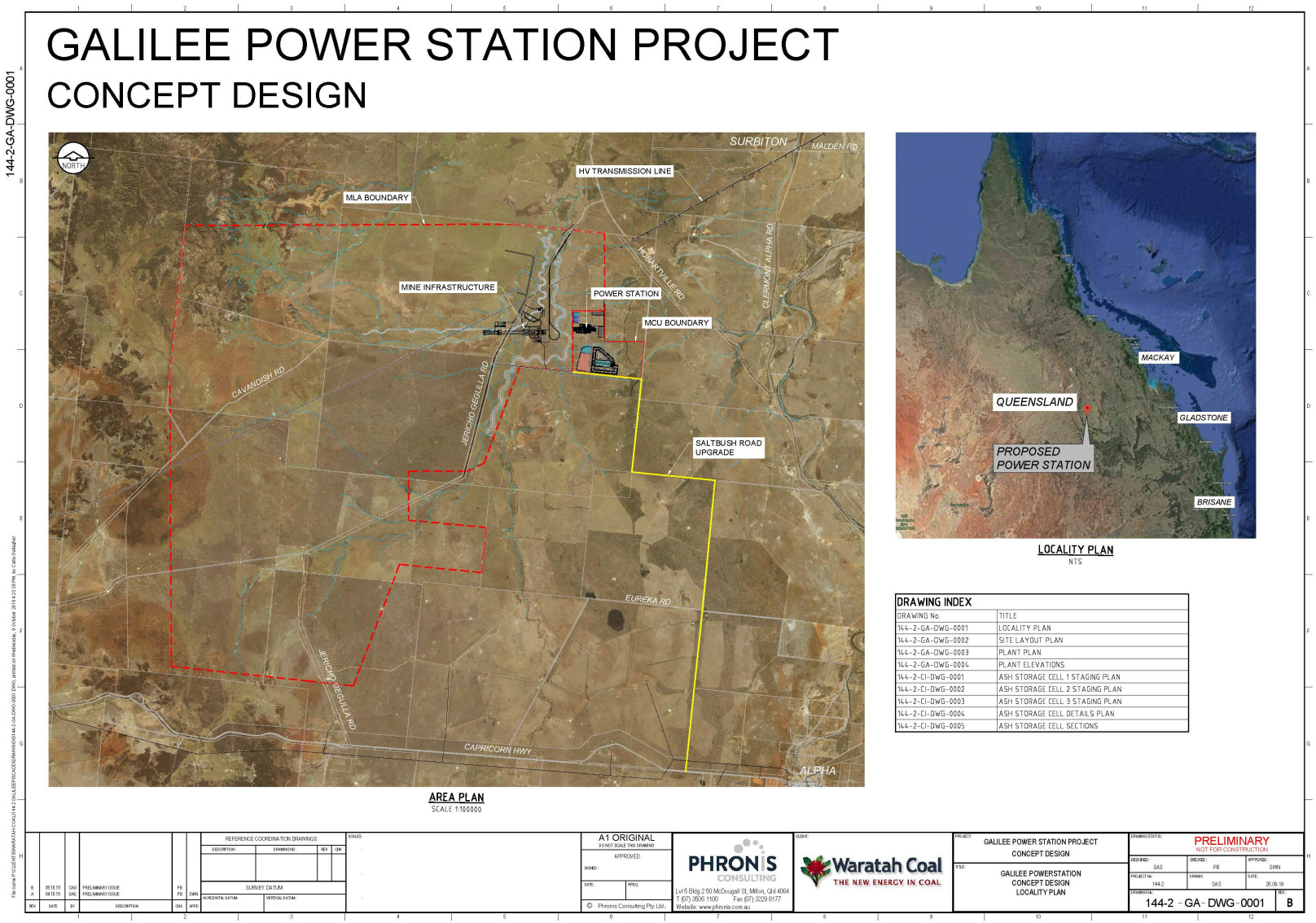


Figure 1: Locality Plan

1.2 SITE DETAILS

1.2.1 Address of Site

Monkland Road, Hobartville
(See **Figure 1** above)

1.2.2 Real Property Description

Part of Lot 2 on SP136836. See **Figure 2** below.

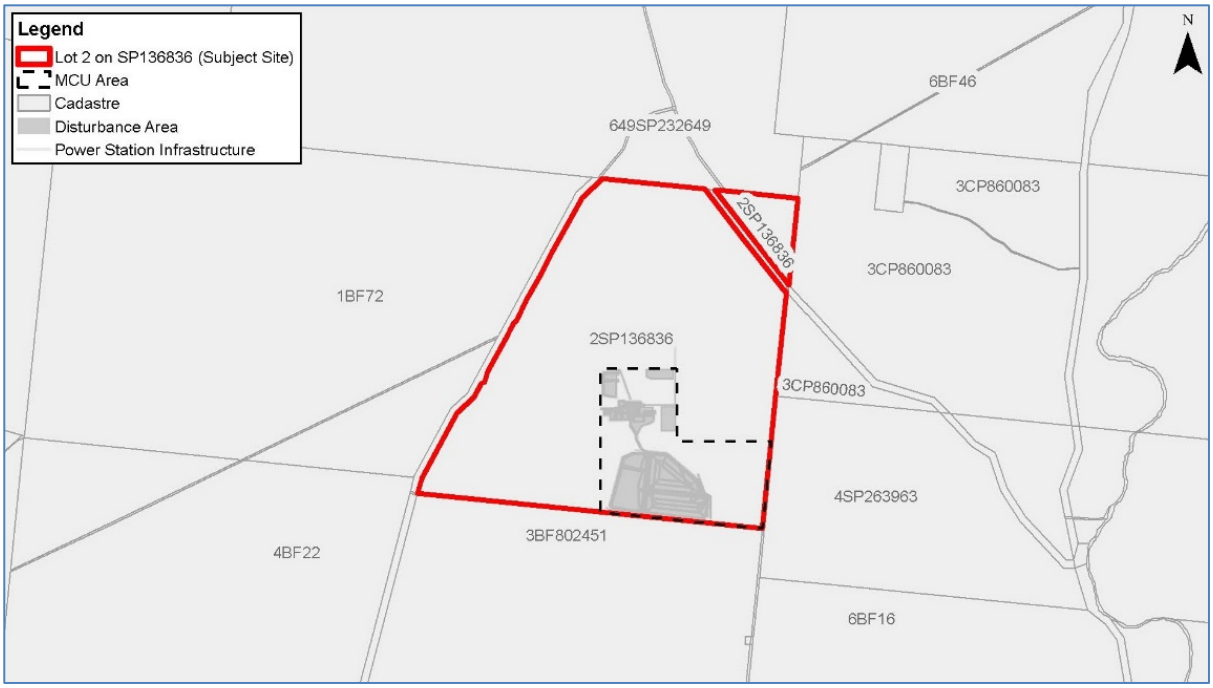


Figure 2: Site Plan

1.2.3 Area of Site

6300ha (1,310 ha subject to the MCU)

1.2.4 Existing Zone

Rural Zone (refer **Figure 3**)

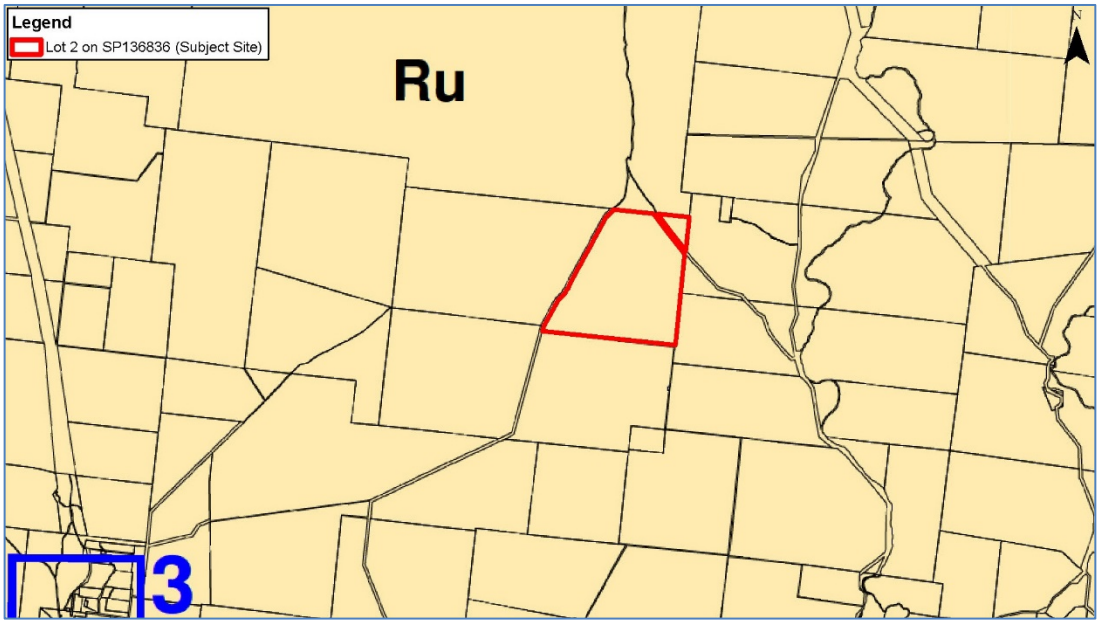


Figure 3: Zoning Plan (Source Jericho Planning Scheme)

1.2.5 Planning Context

The Tables below summarise the relevant State and Local mapping overlays affecting the subject lot.

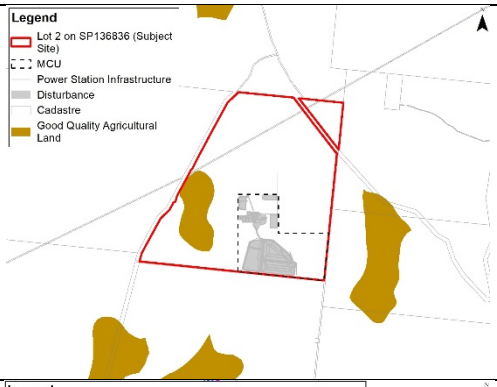
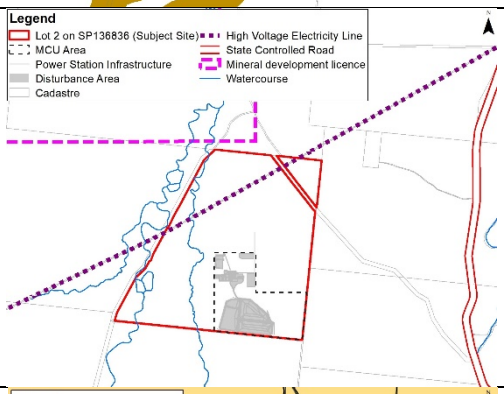
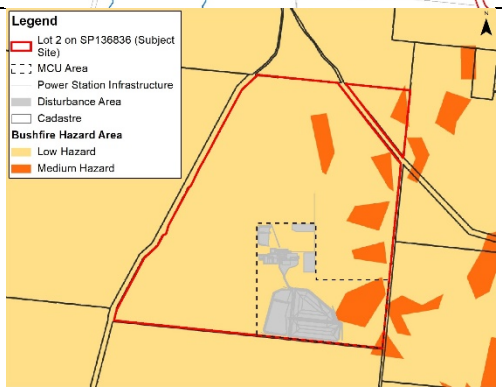
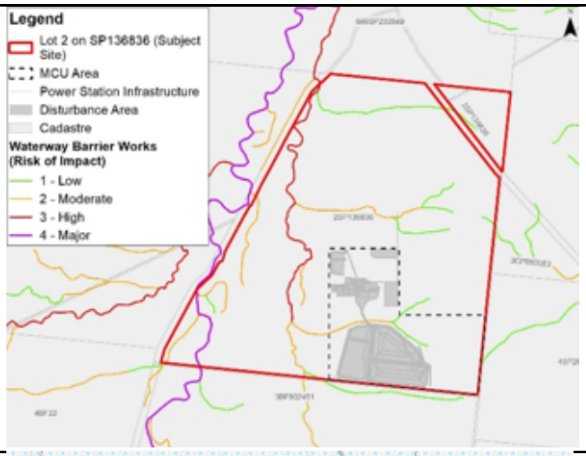
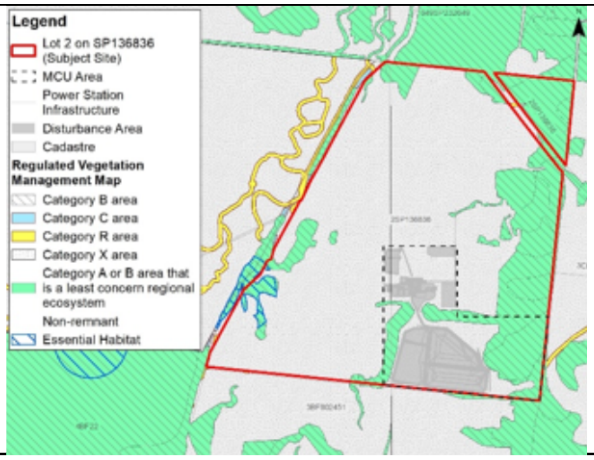
Table 1 – Mapping Layers for Local Planning Instrument		
MATTERS	**MAPPING LAYERS**	**COMMENT**
GQAL – Class C1		Small amount of mapped C1 land which is not affected by proposed power station
Features Map - Electricity lines - Watercourses		There are no watercourses or electricity easements affecting the MCU area. This is addressed in the report.
Bushfire Hazard - Low Hazard Area - Medium Hazard Area		The site is affected by a small amount of the Medium Bushfire Hazard Overlay within the MCU area. The Power Station disturbance area is located within a Low Bushfire Hazard Area.

Table 2 – Mapping Layers for Matters of Interest

MATTERS	MAPPING LAYERS	COMMENT
Fish Habitat Areas - Queensland waterways for waterway barrier works		All levels of waterways present within the site. The actual power station site is affected by one low level "green" waterway draining into one moderate "orange" waterway which is a small drainage line.
Water Resources - Water resource planning area boundaries - Great artesian water resource plan area		Site is within water resource planning area
Native Vegetation Clearing - Regulated vegetation management map (category A and B extract)		Site is affected by small amount of essential habitat and Least Concern Regional Ecosystem. Neither of these overlays are located within the Power station disturbance area

The purpose of these overlays and assessment against the performance outcomes and acceptable outcomes is contained within Section 4 of this report. **Figure 4** illustrates the relevant Overlays and their proximity to the Power Station Disturbance Area.

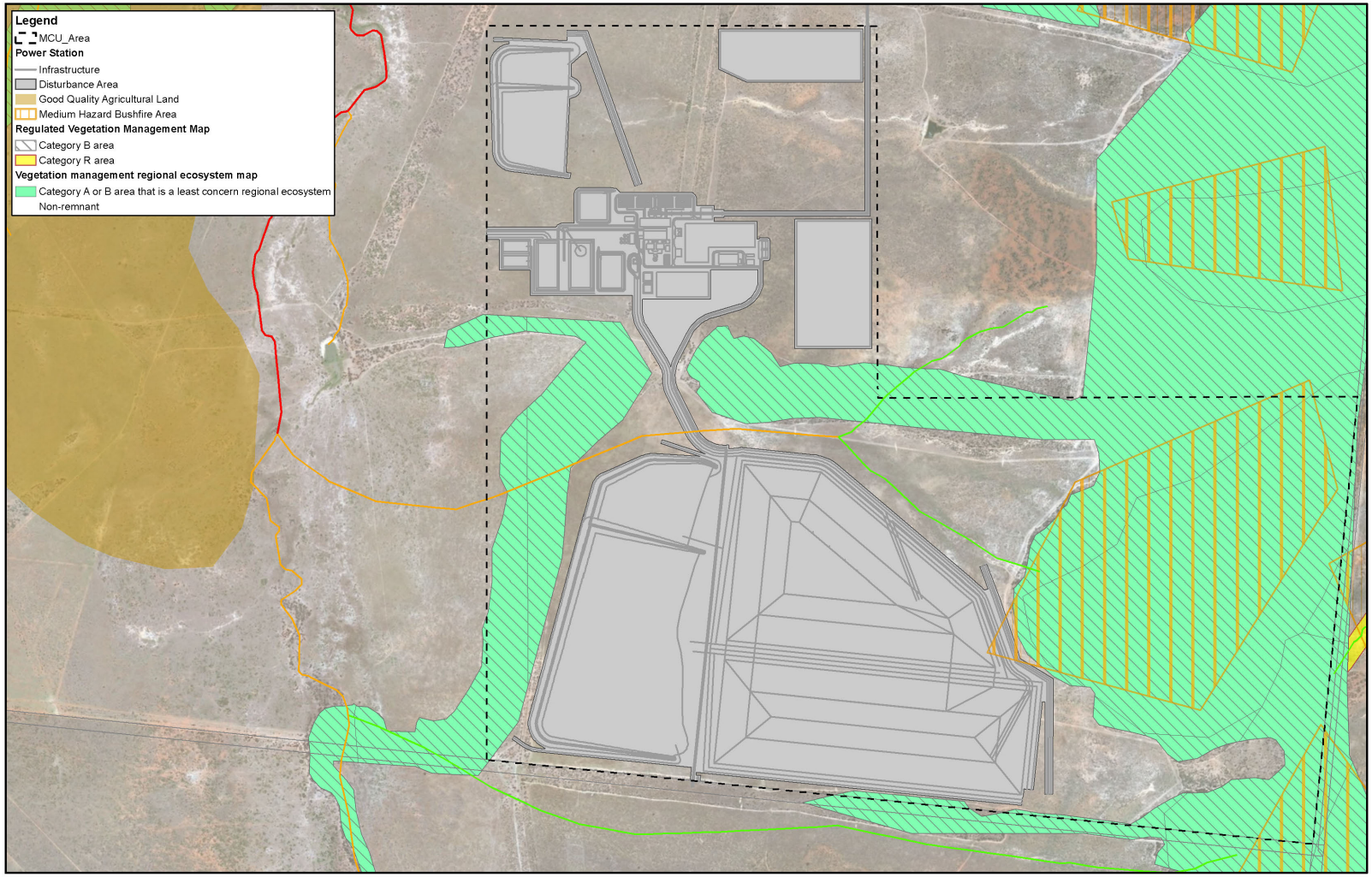


Figure 4: Planning Overlays

1.3 APPLICATION DETAILS

1.3.1 Type of Application

Development	Level of Assessment
Material Change of Use for a Public Utility in the Rural zone	Code
Material Change of Use for an Environmentally Relevant Activity (ERA) – Electricity Generation (ERA14), Extractive and screening activities (ERA16), Mineral and Bulk Material Handling (ERA50), waste disposal (ERA60), Sewerage Treatment (ERA63)	Code
Material Change of Use for a Hazardous Chemical Facility	Code

1.3.2 Applicant

Waratah Coal Pty Ltd
GPO Box 1538
BRISBANE QLD 4001

1.3.3 Contact Person and Details

Cameron Feltham
Director
C J Feltham Consulting Town Planners
Mob 0400 585 937

1.4 DESCRIPTION OF PROPOSAL

1.4.1 Overview

Waratah Coal Pty Ltd (Waratah Coal) is proposing to develop the Galilee Power Station (the Project), a new Ultra-Supercritical coal fired power generation facility in the Galilee Basin in Queensland. The Project is located approximately 30 km to the north of Alpha in Queensland, Australia (**Figure 5**).

The Project involves the development of a 1,400 MW Ultra-Supercritical Power Station adjacent to Waratah Coal's Galilee Coal Project and will have the dual purpose of servicing the public network and providing the power needs for the Galilee Coal Project mine operations (which will undergo a slow ramp up to full capacity over 10 years).

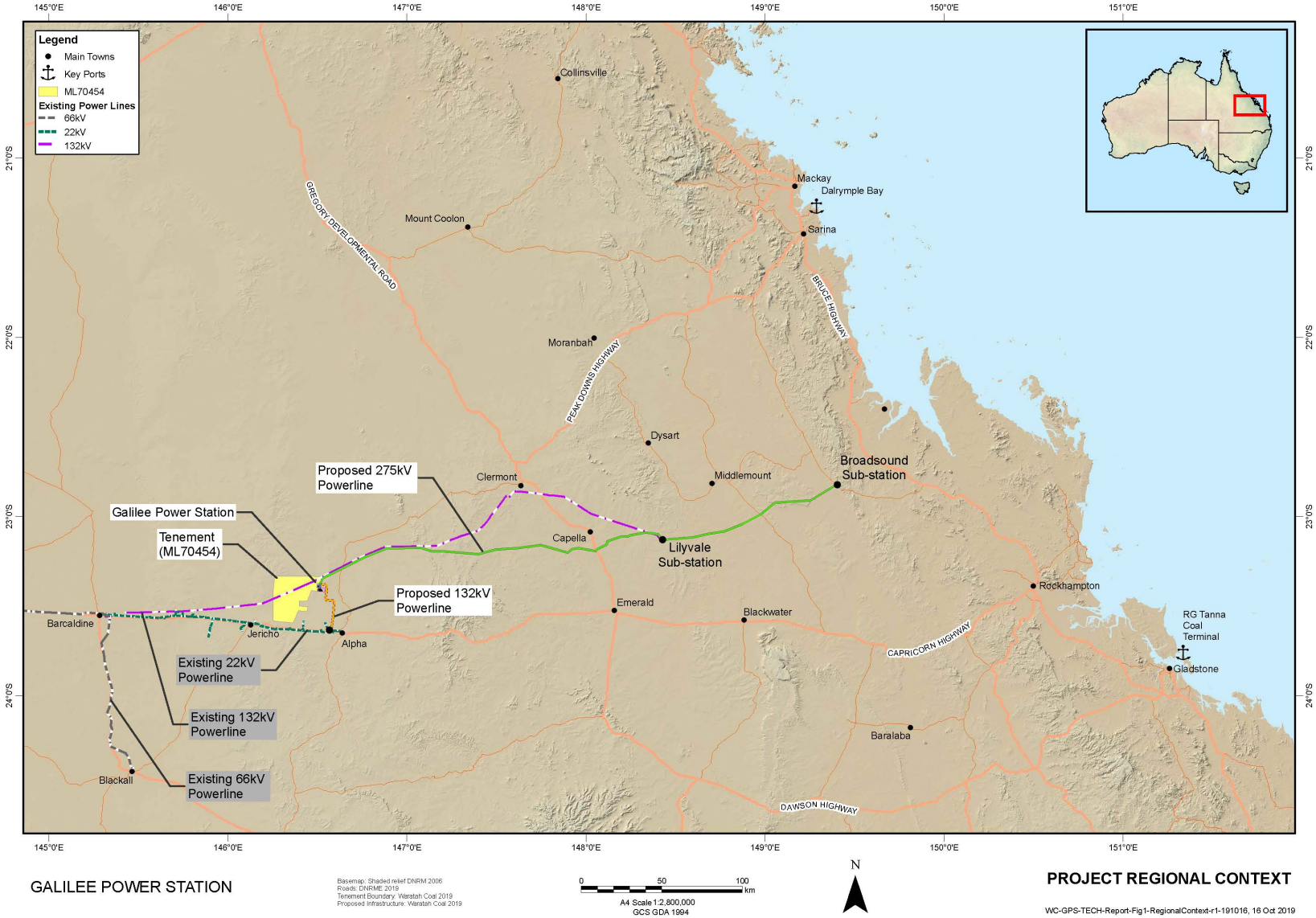


Figure 5: Regional Context

Whilst the Power Station is linked to the Galilee Coal Project, and would not proceed without that project, the two are separate developments and the Galilee Coal Project has been the subject of separate approval processes. The high voltage transmission lines that will be required to convey the power into the national electricity grid will also be a separate action and will be addressed in separate studies and approvals processes.

The Power Station will be situated immediately to the east of the Galilee Coal Project mining lease, in a location known as "Monklands" (hereafter referred to as "the site" or the "Power Station site") (**Figure 2**). Location close to the Galilee Coal Project mines will allow easy coal conveyor transfer to the Power Station. Avoidance of watercourses, protected vegetation communities and habitat for threatened or migratory species were key criteria in selection of the Power Station site.

The Power Station site has been appropriately sized to accommodate the construction of two 700 MW (gross) power plants. The Power Station will require approximately 4 million tonnes per annum (Mtpa) of coal.
Design of the Project has sought to minimise air emissions, and the use of water to the greatest extent possible, using current world's best practice boiler technology, flue gas desulphurisation, and dry cooling to minimise water use. Maximum beneficial reuse of the ash waste stream is also proposed. It is Waratah Coal's intentions that, when commissioned, the Galilee Power Project will be the cleanest coal fired power station in Australia, measured by any metric.

- The Galilee Power Project will be the first coal fired power project in Australia to use Ultra-Supercritical steam cycle, also known as High Efficiency-Low Emissions (HELE) technology
- The Galilee Power Project will be the first coal fired power project in Australia to incorporate flue gas desulphurisation
- The Power Station will employ dry cooling, which reduces significantly reduces the amount of water required for operations compared to conventional evaporative cooling
- In line current best practise, the Waste Containment Facility will be fully lined with a composite liner and the ash will be dry stacked, as opposed to a wet slurry; additionally, the facility will be designed for zero liquid discharge.

1.4.2 Power Station Site

The Power Station will be situated immediately to the east of the Galilee Coal Project mining lease, in a location known as "Monklands" (hereafter referred to as "the site" or the "Power Station site") (see **Figure 6**). Location close to the Galilee Coal Project mines will allow coal to be transferred to the Power Station by conveyor.

The Power Station Site covers an area of 1,310 ha. This is the area that is currently the subject of an Application for a Material Change of Use for a Public Utility under the *Queensland Planning Act 2016*. Within the 1,310 ha, 518 ha will be subject to land disturbance in the form of land clearing and earthworks to facilitate the construction and operation of the Power Station – this area is referred to as the "Disturbance Area". See **Figure 7**.

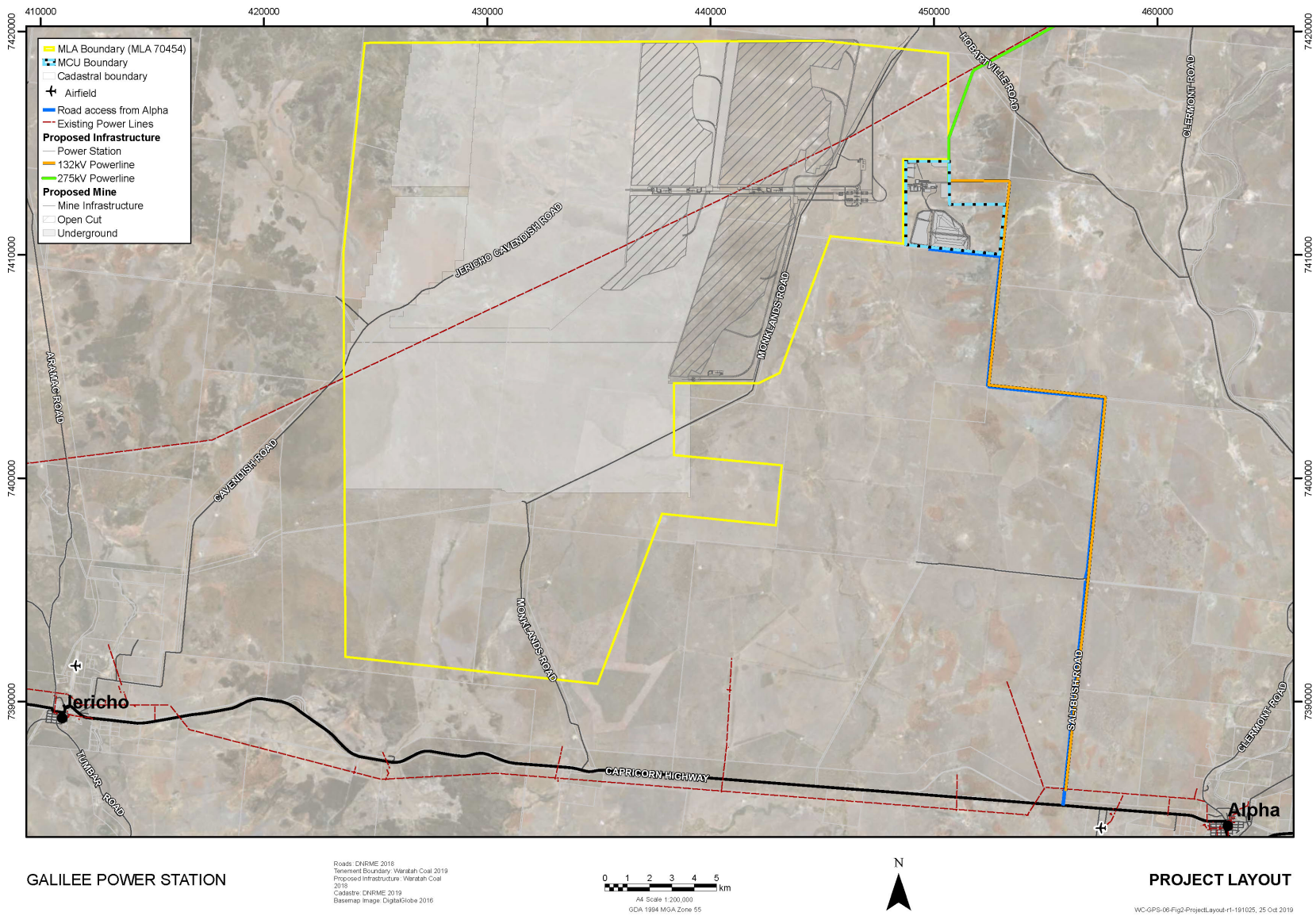


Figure 6: Local Context

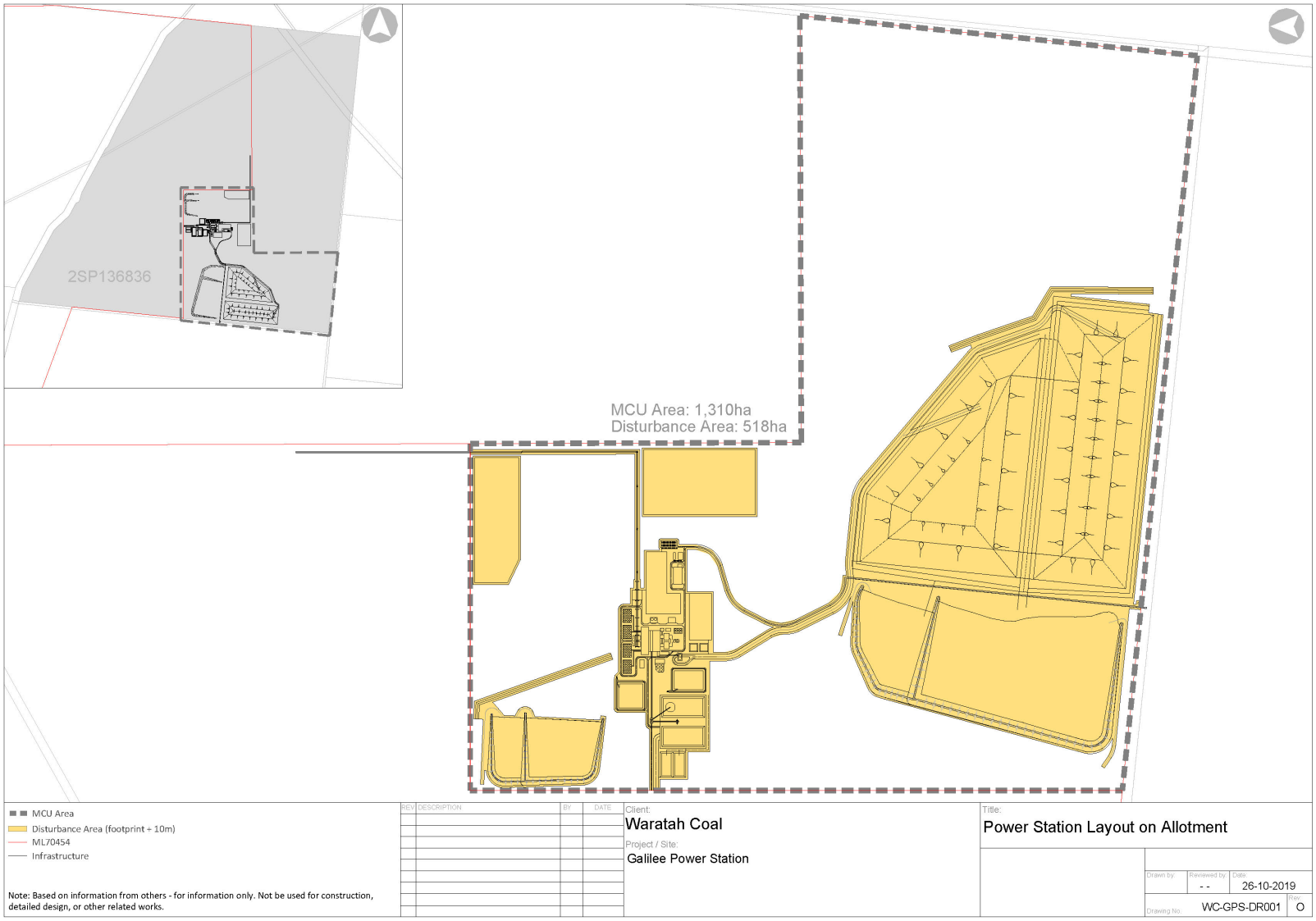


Figure 7: Area of site subject to the Material Change of Use

The Power Station site will contain the following pieces of infrastructure (see **Figures 8** and **9**):

- Conveyors - Overland Conveyor (to bring coal into the Power Station site from the adjacent Galilee Coal Project); Plant Feed Conveyors (between the Coal Handling Plant and the Coal Bunkers)
- Coal Handling Plant – includes Coal Transfer Station; Coal Stacking Conveyor; Coal Stockpiles (sized for 12 weeks storage); Coal Reclaim Conveyors; Coal Stockpile Runoff Ponds
- Power Station – includes Coal Bunkers; Boilers and Turbine Hall; Air Cooled Condensers and Cooling Tower; Stack
- Flue Gas Desulphurisation - Limestone Silo; Limestone Prep Plant; Lime Injectors; Baghouse; Desulphurisation Plant;
- Water Storage and Treatment - Raw Water Dams; Water treatment Plant; Service Water Tanks; Waste Water Ponds
- Ash Handling and Containment Facilities- Ash Silos; Pug Mill; Truck Loading;
- Ancillary Infrastructure – Diesel Unloading and Storage; Hydrogen Store; Laboratory; Workshops; Storeroom; Fire Station; Administration Building; Amenities; Carpark; Lay Down Areas
- Power Transmission Infrastructure - Substation, Switchyards and Transmission Line (note that the Transmission line will form part of a separate EPBC referral);
- Waste Containment Facility (including associated Ash Runoff Water Drains and Runoff Water Dam and Sedimentation Dam).

Table 3 shows the efficiency gains and CO_2 emissions reduction of utilising ultra-supercritical technology over earlier coal-fired technologies. The ultra-supercritical boiler technology currently represents the world's best commercially available coal-fired power plant technology.

Plant type	Queensland Example	Typical CO_2 emissions (kg CO_2-e/MWh)
Subcritical	Gladstone Callide B	860 – 960
Supercritical	Kogan Creek Callide C	820 - 900
Ultra-supercritical	Galilee Power	760 – 810 (target range)

Source: Greenhouse and energy information for designated generation facilities 2016-17.

Table 3: CO_2 Emissions Comparison Table

1.4.3 Conveyors and Coal Handling Plant

The 1400 MW power station will require a feed of approximately 4 million tonnes per annum (Mtpa) of coal from the adjacent Galilee Coal Project. To receive and process this coal, the Power Station will have a dedicated Coal Handling Plant . The Coal Handling Plant will comprise the following key components (see **Figure 9**):

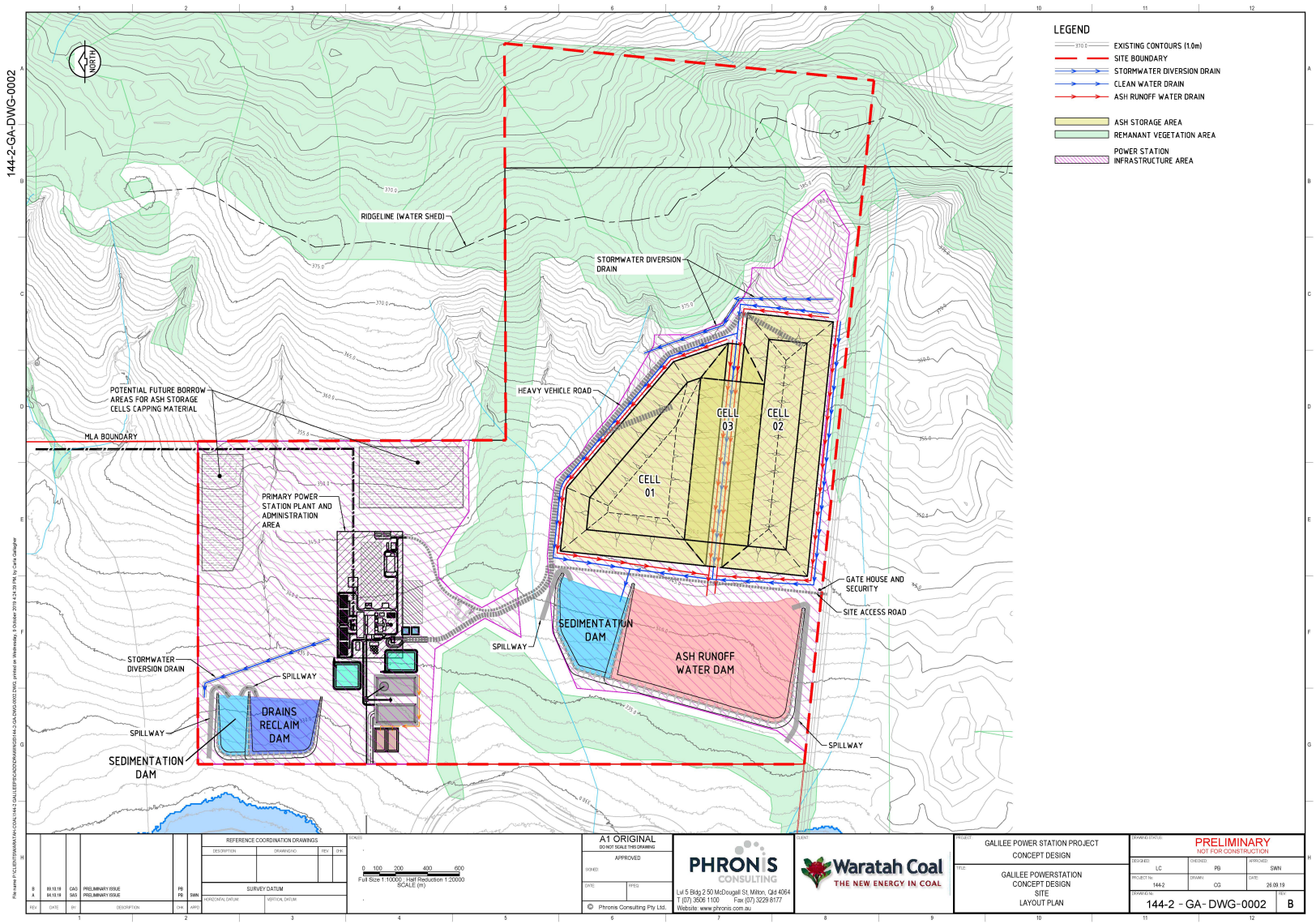


Figure 8 Power Station Site Layout

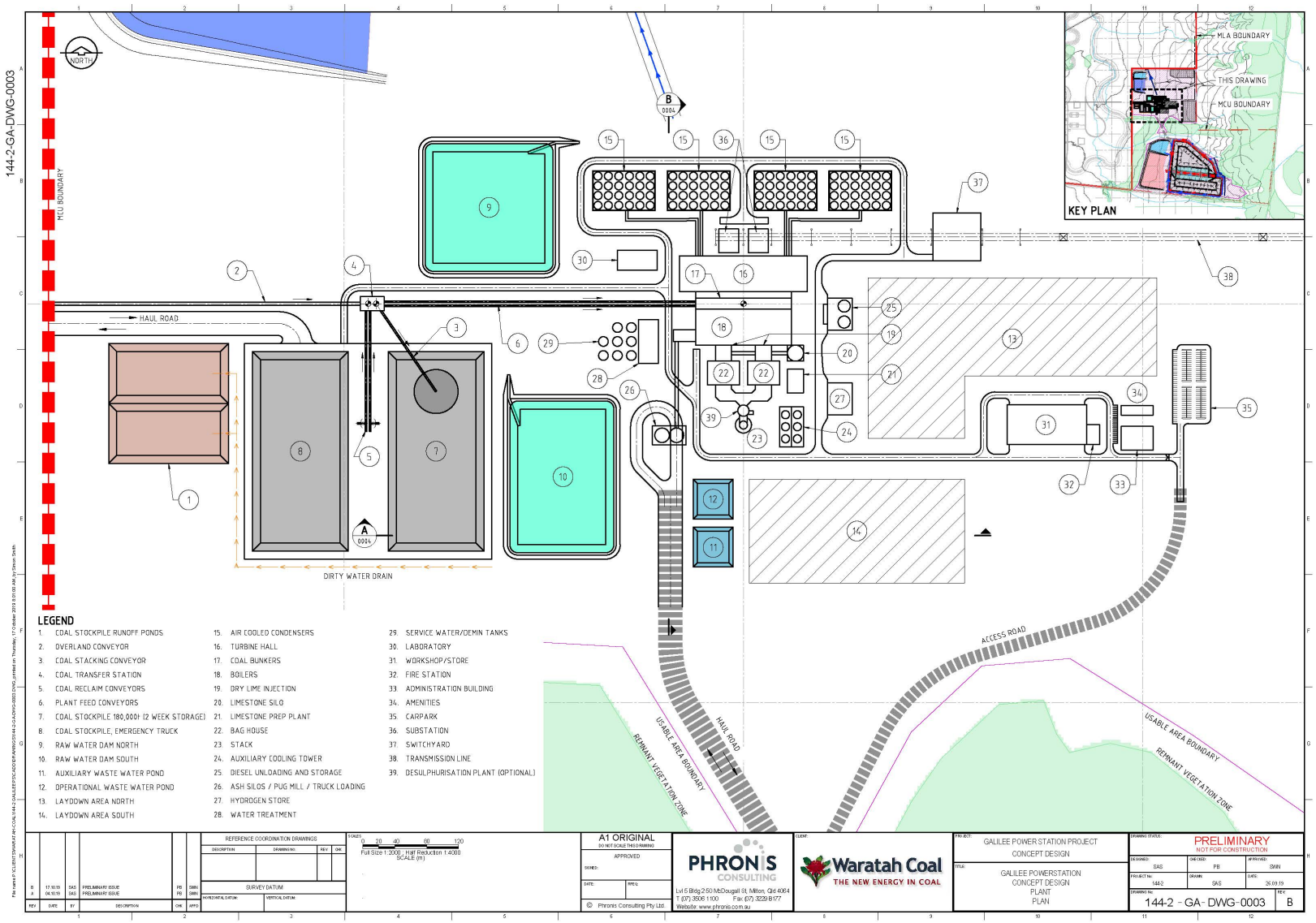


Figure 9: Power Station Detail Layout

- Conveyor from Mine (from site boundary)
- Coal Transfer Station
- Coal Stacking Conveyor
- Coal Stockpiles (sized for 12 weeks storage)
- Coal Reclaim Conveyors
- Rising conveyors
- Coal Stockpile Runoff Ponds

Coal will be transported into the Power Station Site from the mine by conveyor and pass through the transfer station. At the transfer station, coal will either be directed to the stockpiles or directly to the rising conveyors.

The stockpiles are sized to accommodate 12 weeks of supply to the power station. Bulldozers will be used on the stockpile to manage and rotate the stockpile.

Coal from the stockpile is fed to the reclaim conveyors (by bulldozer) which then feed the rising conveyors through a transfer tower.

The rising conveyors feed the unit bunkers, which will hold approximately eight hours of coal for each mill (one bunker per mill and three to six mills per boiler).

Subject to detailed design, conveyors are expected to be partially enclosed and will be roofed where required. Belt cleaning facilities, enclosure of the towers, and a dust suppression system will be provided at transfer points (where conveyors change direction) and will also minimise dust and coal spillage from conveyors.

Run-off storm water from the coal stockpile will be diverted to the coal stockpile runoff ponds. Water from these ponds is to be used for dust suppression, with any remaining water fed to the drains reclaim dam, from which water will be reused within the Power Station ash plant.

1.4.4 Power Station

1.4.4.1 Combustion process

Coal will be transported from the Coal Handling Plant to the Power Station by the rising conveyors. Coal will enter the Coal Bunkers and will be fed into each unit's Bunker by a travelling tripper. The Bunker house will be fully enclosed. A dust suppression system will be provided at all transfer point/houses.

From the Coal Bunkers, the coal will be fed into mills where it will be ground into a powder. The pulverised coal is then pneumatically conveyed to the burners where it is mixed with pre-warmed air and enters the furnace for combustion.

The burners will be low NO_x burners (i.e. staged combustion to limit combustion temperature and NO_x formation). The burn rate will be regulated to

control boiler temperature and pressure as necessary to meet steam demand from the turbine.

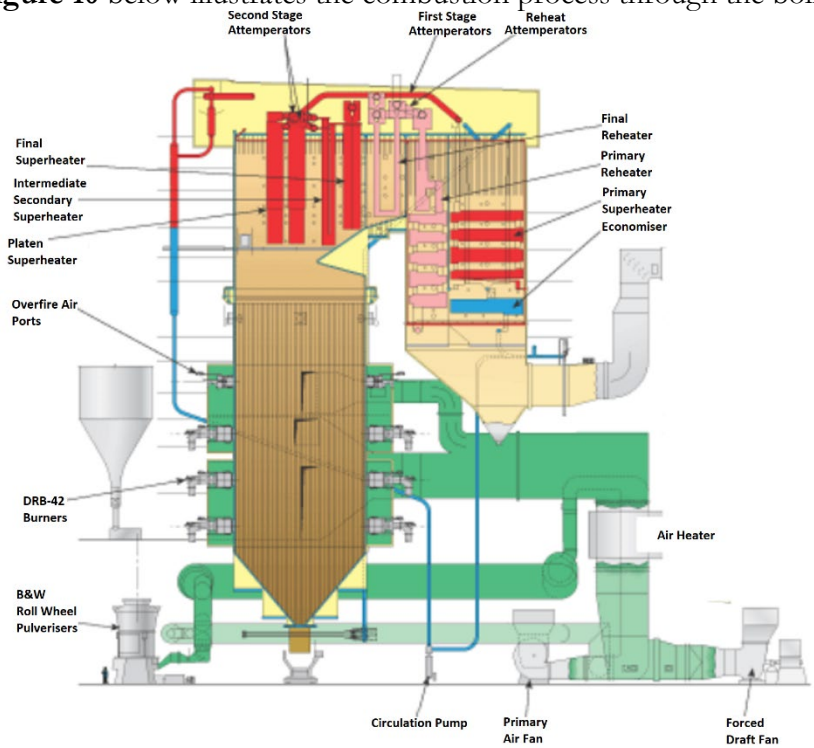
Sootblowers are used to ensure that furnace tubes are cleaned of clinker and ash build-up to allow efficient heat transfer from the furnace into the steam system.

Combustion air is drawn into the draft system through Forced Draft Fans and Primary Air Fans. The Primary Air Fans provide the air necessary for the pneumatic conveyance of pulverised fuel from the mills. The Forced Draft Fans provide the balance of the air required for efficient combustion. Excess O_2 (above stoichiometric quantities) is provided by the Forced Draft Fans in order to ensure complete combustion and therefore minimisation of carbon monoxide emissions.

Combustion air is pre-heated using regenerative air heaters to maximise boiler efficiency prior the air entering the furnace. Combustion occurs in the furnace producing heat that is either radiated into the waterwalls (producing steam) or passed as convection through the superheaters, reheaters and economiser sections of the boiler with the flue gas. As the flue gas passes through the superheaters, reheaters and economisers, heat flows from the flue gas into the steam or water inside the tubes contained within these boiler sections.

The flue gas leaves the rear pass of the boiler and then passes through the air heaters, transferring remaining heat into the incoming combustion air.

Figure 10 below illustrates the combustion process through the boiler



Source: Figure 42, Australian Power Generation Technology Report, CO_2CRC 2015.

Figure 10: Vertical tube boiler layout used in ultra-supercritical power stations

1.4.4.2 Steam and water cycle

Cold water leaving the condenser is heated using steam drawn from the turbine in a series of low pressure feed water heaters and a deaerator tank. The feed water is then pressurised by the feed pump and flows through a series of high pressure heaters prior to entering the economiser section of the boiler.

In the economiser, the water is heated further with convective heat from the flue gas. The hot water enters the separator and waterwalls and gains further temperature. As the process is ultra-supercritical, there is no distinct phase change that occurs in the waterwalls. Steam leaves the waterwalls and enters the superheater where its temperature rises to main steam temperature.

Main steam leaves the boiler and enters the high pressure section of the turbine where its enthalpy converts to shaft power. Intermediate pressure steam exhausting from the high pressure section of the turbine returns to the reheater section of the boiler where it rises in temperature prior to entering the intermediate and low pressure sections of the turbine.

Small amounts of steam are progressively drawn from the turbine in order to provide efficient heating to the feed water heaters.

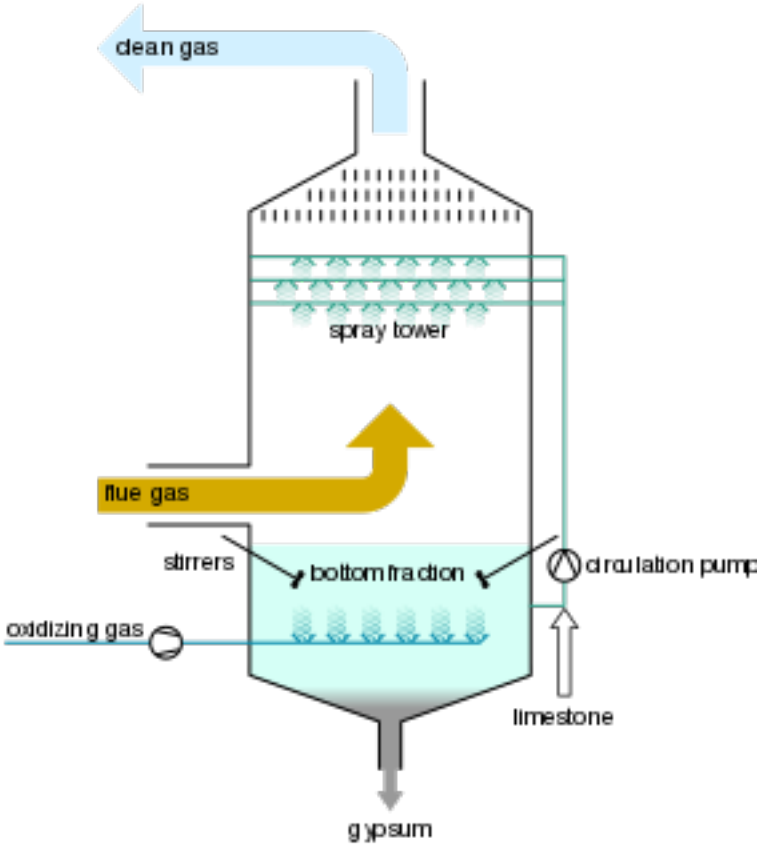
Steam exiting the low pressure turbine is directed to the air cooled condensers, where the steam condenses into water and the cycle starts again.

1.4.5 Flue gas cleaning process

The flue gas leaves the air heaters and then passes through the fabric filters, where particulate matter and heavy metals (frozen to ash particles) are removed.

Limestone powder is injected either into the flue gas in the economiser section of the boiler or as a slurry in separate scrubbers. The lime reacts directly with the SOx to form solid calcium sulphite ($CaSO_3$), which is removed from the flue gas stream either through the bag filters (if dry injection is used) or oxidised to form saleable gypsum (if scrubbers are used).

Wet slurry limestone systems are common globally. They consist of a spray tower in which a slurry of lime or limestone is sprayed through the flue gas as the flue gas passes through the tower where Calcium Sulphite is formed. The slurry (now containing Calcium Sulphite) drops to a collection pond where oxygen is added and the Calcium Sulphite and water react to form gypsum ($CaSO4 \cdot 2H2O$), which is then removed, dewatered and prepared for sale. A typical schematic diagram is shown below.



After desulphurisation, the flue gas is drawn from the system by the induced draft fans and exhausted through the stack.

1.4.6 Water Storage and Treatment

The water storage and treatment system consists of:

- Raw Water Dams
- Water Treatment Plant
- Sewage Treatment Plant
- Service Water Tanks
- Waste Water Ponds

Operation of the Power Station will require an estimated 1,374 megalitres (ML) of water per year. Mine dewatering of the adjacent Galilee Coal Project will produce 3,740 ML per annum. Therefore, sufficient water for all project operations can be provided from the mine dewatering process without need for external water sourcing. The Power Station will use air-cooled condenser technology to further reduce water usage to values significantly lower than conventional power stations using evaporative cooling towers.

The overall Power Station water management system is provided in **Table 4** and **Figure 11** below

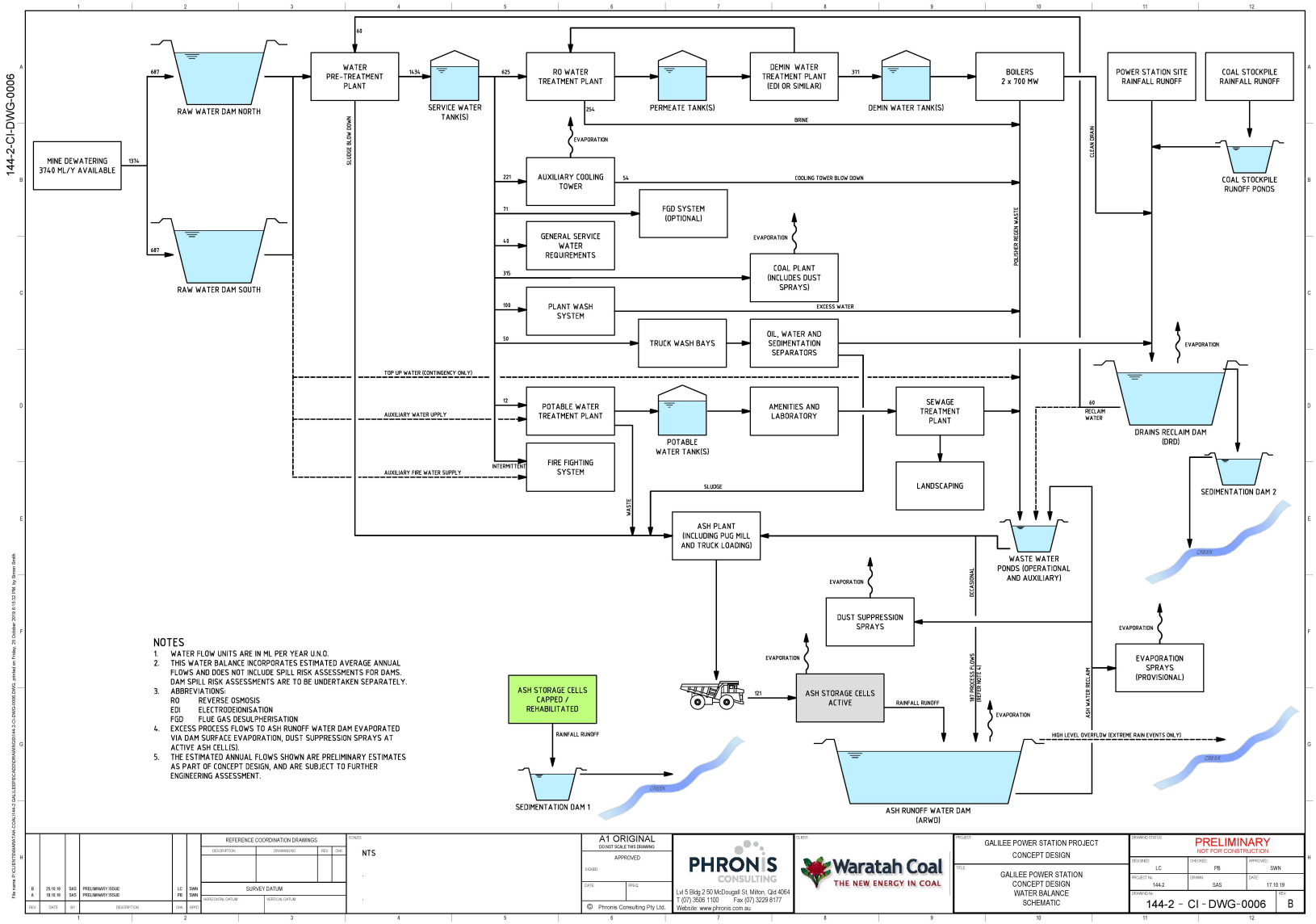


Figure 11 Galilee Power Station Water Balance Flow Chart

A water treatment plant will process raw water delivered to the site via a pipeline from the mine dewatering plant. Water will be treated in the water treatment plant and will be used for industrial uses within the power station, primarily the boiler demineralisation water; service water for boiler wash down, amenities and landscaping. The water treatment plant will use a reverse osmosis (RO) plant, to provide permeate (i.e. treated, product) water to the demineralisation plant as well as the water and chemical storage and handling system. The demineralised water plant will further treat the permeate to produce ultra-pure demineralised water for use in the boilers. A separate system will be used to treat potable water to drinking water standard.

All process wastewater will be re-used within the system until it either evaporates or binds into the ash stored within the Waste Containment system. There will be zero liquid discharge from the process.

A sewage treatment plant within the Power Station grounds will be provided for the treatment and processing of wastewater resulting from site facilities (e.g. toilets, staff room sinks and showers) for station operations staff. Liquid waste from the sewage treatment plant will be utilised for landscaping.

During on-site construction work a skid mounted package sewage plant sized to process and treat sewage for construction workers will be provided.

During both construction and operation, workers will be housed in the mine construction and operation accommodation or a commercial facility in Alpha (note that Waratah Coal's preference is to use the commercial facility in Alpha). The mine accommodation can handle 2000 workers and will have its own sewage treatment plant. This accommodation would also be used for the influx of workers for major planned shutdown and forced unit outages.

Table 4: Galilee Power Station Project Water Balance

Input Water	Water Volume (ML/yr)
Mine Dewatering - Estimated Water Available	3,740
Mine Dewatering - Water Required	1,374
Drains Reclaim Dam - Recycled/recovered water	60
Total Water Usage	1,434
Surplus mine water	2,366
Internal Water Flows	
Primary Water Flows	
RO/Demin Plant input	625
Auxiliary Cooling Tower Make Up	221
FGD System (Optional)	71
Service Water (excluding Demin Water for boilers)	40
Coal Plant (incl. dust sprays)	315
Plant wash system	100
Truck Wash Bay Water	50
Potable Water	12

Fire Fighting System	0
Total Primary Water Flows	**1,434**
Water required from Mine Dewatering	**1,374**
Other Water Flows	
Demin Make Up to Boilers	371
RO Brine to Waste Pond	254
WTP recovery	59%
Auxiliary Cooling Tower Blow Down	54
Ash Containment - Evaporation	187
Ash Containment - Water bound within ash	121

1.4.7 Ash Handling and Containment Facilities

The ash handing and containment facilities include:

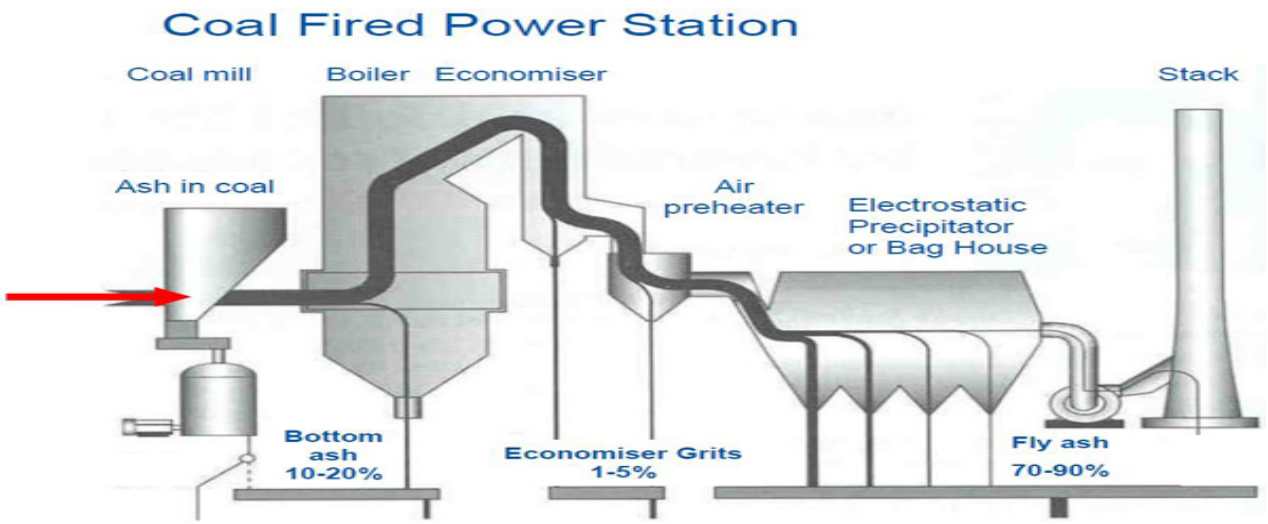
- Ash Silos
- Pug Mill
- Truck Loading
- Waste Containment Facility (including associated Ash Runoff Water Drains, Runoff Water Dam and Sedimentation Dam)

Bottom ash is collected in a hopper at the bottom of the boilers. Ash is removed from the boiler through a dry scraper chain system and cooled with counter flow air drawn into the boiler through the induced draft fans. The bottom ash is damped with water sprays prior to being loaded into trucks for transportation to the waste containment facility.

Fly ash is collected in hoppers at the bottom of the bag filter houses. The ash is pneumatically conveyed to pug mills where it is conditioned with water to the consistency of wet sand. The conditioned ash is then loaded onto trucks for transportation to the Waste Containment Facility. If dry limestone injection is used, then the desulphurisation reagent is also collected with the ash in the bag filters. Heavy metals in the flue gas freeze onto ash partials and are removed with the bag filters.

Economiser grits are collected in the economiser and air heater hoppers and sent to the pug mills where they are mixed in with the fly ash.

The coal ash combustion collection process is shown in **Figure 12**



Source: Flyash Australia: http://www.flyashaustralia.com.au/whatisflyash.aspx

Figure 12 : Coal fired power station combustion byproduct collection process

A Waste Containment Facility will be constructed within the Power Station Disturbance Area to store the ash resulting from the combustion process (bottom ash, fly ash and economizer grits). The facility will have an area sufficient to store ash produced in the power plant over a fifty year period (calculated on the basis of the worst case ash production scenario of dry limestone injection). The Waste Containment Facility is designed on a storage volume of 33.6 Million m^3, which is sufficient to contain all of the ash produced over fifty years of operation at the high end of expected ash production rates. Ash production waste is expected to range from 500,000 to 850,000 Tonnes per annum depending upon ash content, generation rates and the final process design for flue gas desulphurisation. See **Figure 13**.

The Ash Containment Facility will be developed progressively as required during operations and comprise of three ash containment cells. The three ash containment cells have approximate consecutive containment capacities for 22 years, 20 years and 8 years (respectively) of Power Station operations (under worst case ash production rates).

To minimise the extent of disturbance and manage the control of water and ash containment, it is anticipated that the facility will have only have one active containment cell open at any time during operations. It is anticipated that around fifty to one hundred meters of exposed ash surface will lead the progressive rehabilitation of the Waste Containment Facility. Exposed surfaces of the Waste Containment Facility will be wetted with sprinklers to minimise dust emissions and rehabilitated as soon as possible after the final form has been reached. A Dust Control Strategy will be developed for the plant during the detailed design phase of the project.

Prior to ash placement, cell bases will be prepared by the removal of topsoil and other earth material for potential earth perimeter bunds and future capping.

The potential, size and extent of earthen perimeter bunds to assist with control of ash filling are subject to further engineering assessment, including

geotechnical assessment, during the detailed engineering design phase of the project. Earth fill material will be predominantly sourced from within the cell basins.

To prevent possible leakage of contaminants into the underground water system each cell will be lined with a composite liner comprising an upper component consisting of a geomembrane liner placed directly on top of a lower component consisting of compacted soil or clay with a suitably low hydraulic conductivity.

Ash will be transported and deposited via trucks into the ash containment facility where the ash will dry and harden. The power plant will be designed and operated in accordance with the "Managing Respirable Dust Hazards in Coal-Fired Power Stations" Code of Practice (2018). To the maximum extent possible, ash will be contained within negative pressure ducted structures during conveying and will be conditioned prior to loading into trucks.

The facility will be designed so that the floor grades away from the deposited ash and run-off water will be drained to the Ash Runoff Water Dam, where it will be either utilised for dust suppression on the Waste Containment Facility, evaporated or re-used in the ash system. The deposited ash will be progressively profiled into permanent batters and capped to a stable landform suitable for re-vegetation. The ash containment facility cells will be progressively filled and then rehabilitated using retained earth fill and topsoil and planting of native grasses consistent with the local ecosystem. See **Figure 14**.

A consequence category assessment will be undertaken for the Power Station dams in accordance with the Queensland Department of Environmental and Science (DES) Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (DES, 2016). The run off dams will be designed with sufficient containment capacity to minimise risk of discharges of contaminated water in accordance with the DES Manual.

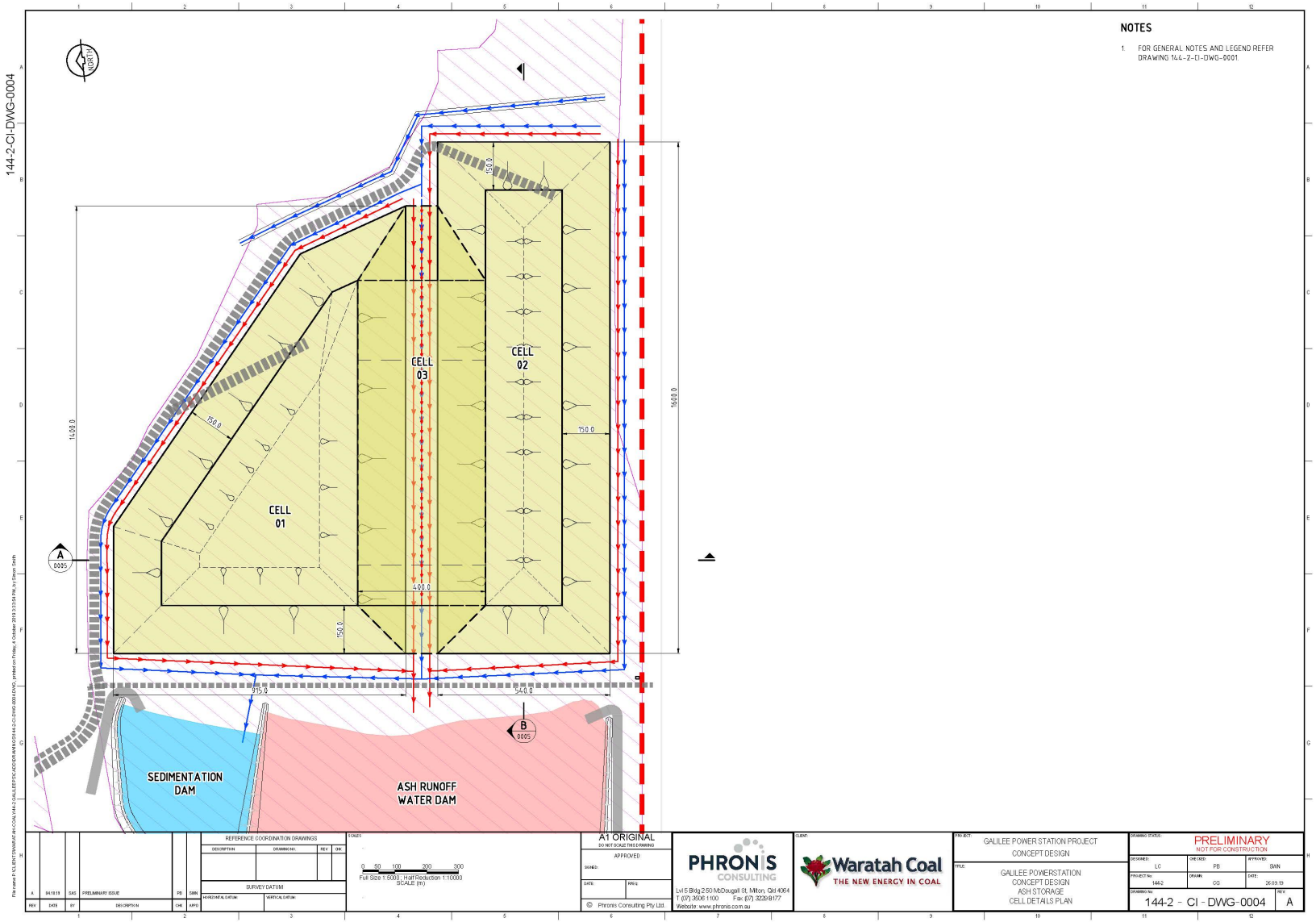


Figure 13: Waste Containment Facility

Figure 14; Stanwell Power Station's Ash Containment Facility as an example of progressive remediation

(Imagery © 2019 CNES/Airbus, Map data © 2019 Google).

Waratah Coal will also look to develop markets for the produced fly ash and bottom ash, and to use wherever possible on-site for road works or batch plant operation.

1.4.8 Ancillary Infrastructure

Ancillary infrastructure includes:

- Diesel Unloading and Storage
- Hydrogen Plant and Store
- Laboratory
- Workshops
- Storeroom
- Fire Equipment
- Administration Building
- Amenities
- Carpark
- Lay Down Areas

The above facilities will be constructed within the Power Station site (see **Figure 9**). These buildings will generally be single story pre-fabricated modular structures or pre-cast structures. Ancillary facilities will include:

- a common compressed air system consisting of plant air compressors, and air-drying plant for instrument air and service air
- air conditioning and ventilation system
- fire protection system as required
- chemical storage area
- maintenance crane for the steam turbine generator building and miscellaneous hoists and monorails
- diesel storage and supply system
- switchyard and transmission infrastructure
- administration and logistics buildings
- car parking area
- site access road, and
- lay down area for construction equipment and materials for future maintenance outages.

A site compound will be established to cater for site requirements during construction, including a prefabricated site office, crib facilities, first-aid centre, safety building, fire emergency facilities, vehicle parking area and a covered store. These buildings will generally be pre-fabricated.

1.4.9 Power Transmission Infrastructure

- Substation
- Switchyards and Transmission Line (the portion that lies within the Power Station site only)

Power will leave the generators and be transformed to a higher voltage prior to it reaching the switchyard. The switchyard will include a feed to the mine and into the local Ergon systems in addition to a feed to the Powerlink system. The switchyard will contain transformers as required to meet the relevant transmission and distribution voltages.

The transmission and distribution lines will be the subject of separate approval processes.

1.4.10 Water Storage Dams

There are four water storage dams required as part of the Power Station operation.

The description of each of these dams and preliminary sizing have been included in **Table 5.**

Dam	Height (Maximum from downstream toe to crest) (m)	Storage Capacity to natural surface (ML)	Borrow material for dam embankment (m3)	Storage Capacity including borrow excavation (Refer Note 1) (ML)
Ash Runoff Water Dam	8.8	2,272	503,000	2,775
Sedimentation Dam 1 (Adjacent to Ash Runoff Water Dam)	7.8	475	139,000	614
Drains Reclaim Dam	4.5	81	57,000	138
Sedimentation Dam 2 (Adjacent to Drains Reclaim Dam)	4.5	53	36,000	89

Table 5: Proposed Dams- Preliminary Heights and Capacities

In regard to Queensland Government regulations for dams, the following information is provided.

Dams or levees constructed as part of an activity under an environmentally relevant activity (ERA), are regulated under the *Environment Protection Act 1994,* principally via the following Department of Environment and Science (DES) publications:

- Guideline - Structures which are dams or levees constructed as part of environmentally relevant activities – ESR/2016/1934 - Version 9.00 – Effective 01 APR 2019 - DES

- Manual for Assessing Consequence Categories and Hydraulic Performance of Structures – ESR/2016/1933 – Version 5.01 – Effective 26 MAR 2016 - DES

The Manual for Assessing Consequence Categories and Hydraulic Performance of Structures sets out the requirements of the administering authority, for consequence category assessment and certification of the design of 'regulated structures', constructed as part of environmentally relevant activities (ERAs) under the *Environmental Protection Act 1994* (EP Act).

Structures are assessed using this manual as being in one of three consequence categories: low, significant or high. Where categorised as a significant or high hazard, the structure is referred to as a "regulated structure".

Requirements include that if the dam is;

- more than ten metres in height with a storage capacity of more than 1500 Mega litres (ML); or
- more than ten metres in height with a storage capacity of more than 750ML and a catchment area that is, more than three times its maximum surface area at full supply level;

then a failure impact assessment must be included in the consequence category assessment, unless valid justification is documented in the hazard category assessment for not doing so.

Note that the "referable dams" designation relates to water dams under the *Water Supply (Safety and Reliability) Act 2008*. The Water Supply Act states that "referable dams" requirements do not apply to a hazardous waste dam, and that a hazardous waste dam is not a referable dam. The same dam height and capacity parameters above apply to dam failure assessments to determine if a water dam is a "referable dam".

The Manual for Assessing Consequence Categories and Hydraulic Performance of Structures defines a range of "failure to contain" and "dam break" scenarios to be considered in the hazard category assessment.

In addition to the regulations under the *Environmental Protection Act 1994*, sites where it has been determined by the regulator (DES) that an Environmentally Relevant Activity (ERA) is being carried out, an Environmental Authority (EA) as issued by the regulator (DES) also applies. The EA includes operational and monitoring requirements for regulated structures/dams.

It would be expected that an Environmental Authority (EA) would be issued for the proposed Galilee Power Station.

As per the table above "Proposed Dams – Preliminary Heights and Capacities – Concept Design" all dams are less than 10 m in height. Therefore, as per the Manual, a failure impact assessment is not required. However, it should be noted that the DES may direct that a failure impact assessment is carried out.

Nevertheless, for all the four proposed dams, a Consequence Category Assessment, is required to be carried out, which will determine if they are "regulated structures".

For the purposes of the concept design and preliminary dam sizing, the Ash Runoff Water Dam, has been assumed to have a high consequence category, subject to a consequence category assessment. This is considered a conservative assumption. A high consequence category dam is required to have a spill risk less than 1:100 Annual Exceedance Probability (AEP) over a 3 month critical wet period during the wet season. The Ash Runoff Water Dam has been sized on this spill risk basis, with consideration of the active ash cell deposition areas. Should the consequence category assessment result in a lower consequence category, than the spill risk requirement would reduce and the dam size could be reduced accordingly (e.g. For a significant consequence category the spill risk requirement is 1:20 AEP).

A spill risk assessment has not been undertaken for the Drains Reclaim Dam. However the dam size as indicated in the concept design (with borrow excavation included) is similar to the Drains Reclaim Dam size at Kogan Creek Power Station.

As per Note 2 for Drawing 144-2-CL-DWG-0001-A:

> *The Ash Runoff Water Dam, sedimentation dams and drains reclaim dam arrangement and sizes are shown in concept only, and subject to further engineering assessment, including requirements as per the "manual for assessing consequence categories and hydraulic performance of structures", Queensland department of environment and science, as outlined below.*
>
> - *Further water balance assessment incorporating power station process water balance assessment.*
> - *Consequence category assessment.*

In summary:

The proposed dams would be constructed as part of an activity under an environmentally relevant activity (ERA), and regulated under the Queensland Environment Protection Act 1994, principally via the following Department of Environment and Science (DES) publications:

- Guideline - Structures which are dams or levees constructed as part of environmentally relevant activities – ESR/2016/1934 - Version 9.00 – Effective 01 APR 2019 - DES
- Manual for Assessing Consequence Categories and Hydraulic Performance of Structures – ESR/2016/1933 – Version 5.01 – Effective 26 MAR 2016 - DES

A Consequence Category Assessment, would be carried out for each dam during preliminary/detailed design, which will determine if the dams are "regulated structures" in accordance with regulations under the *Queensland Environment Protection Act 1994*.

1.5 CONSTRUCTION WORKFORCE AND PROCESSES

1.5.1 Workforce

It is expected that a peak workforce of up to 1,000 will be required.

It is anticipated that the workforce numbers will build up to a peak in Q2 2023 as boiler and turbine erection is being finalised, erection work is still proceeding on the balance of the plant and a range of commissioning works are underway.

The peak numbers would be maintained for about 4 - 5 months and would then fall away.

Employees will be sourced locally wherever possible, considering available skills set and experience. However, it is anticipated that many workers needed for the workforce will be sourced from outside the region during the construction period. The workforce will be accommodated in Alpha at one of the already designed and proposed mine camps. Buses will be provided to transport the workers from the Mine Camp to the work site.

To facilitate the fly in-fly-out workforce, discussions are already in place to upgrade the Alpha Airport to accommodate larger aircraft (e.g. fifty seat turbo-prop aircraft) which will provide a service from Alpha to Rockhampton Airport.

1.5.2 Construction Hours

The bulk of construction activities are proposed to be undertaken in daytime hours seven days per week, from 6.30 am to 6.30 pm although some critical path work such as weld inspection will be undertaken at night from time to time. During commissioning workers will be required to work extended hours progressing to 24/7 operations.

It is recognised that a number of construction and commissioning activities will need to be undertaken at times when there are minimal personnel on site for safety reasons, and to progress time critical path activities.

1.5.3 Construction Methods

The overall construction works for the Project are expected to last three to three and half years. The first thermal generator would be ready for use approximately 36 months after commencement of construction. There will be a lead-time of about six months until the completion of the second unit.

The main construction activities include the following:

- site establishment and preparation for construction
- bulk earth works
- civil works, including building and plant foundations and drainage structures
- erection of plant and equipment

- plant testing and commissioning, and
- completion and landscaping.

Construction activities would normally be undertaken seven days a week. Generally, work will be restricted to daylight hours; however, some critical path work will progress over night shifts (particularly during commissioning). Work will be planned such that tasks that have the potential to generate a higher degree of noise levels are effectively managed and controlled.

The site will be prepared by:

- surveying of the Power Station site, Waste Containment Facility and access road
- preparation of a site access track / haul road
- clearing, grubbing and grading of vegetation and other material unsuitable for foundation purposes using dozers and excavators within the footprint of the project area
- site compound establishment, and
- topsoil will be stripped ahead of earthworks and stockpiled for reuse during rehabilitation of areas no longer required for operation.

The site will be cleared in a staged approach, commencing with the site access road, Power Station compound site and facilities, laydown areas and diesel generator sets as required. Whilst the site area is relatively flat, some earthworks will be required to prepare laydown areas, hardstands, erosion and sediment controls, ash storage area, haul roads and structural foundations. Erosion and sediment controls will be put in place in the early stages of earthworks. Heavy machinery, including bulldozers, excavators, graders and trucks will be used to excavate, level and shape areas as required. The plant testing and commissioning will be undertaken progressively over a period of approximately six months.

1.5.4 Temporary Batch plant

The Power Station foundations and civil works will require substantial quantities of concrete to be produced and poured. As such a batch plant will be established on site. The size of the batch plant is to be determined dependent upon whether it will also provide product to the mine. Nevertheless, a quarry will need to be sited to provide suitable aggregate to the batch plant. Bulk cement will need to be transported to site and stored in temporary silos. Several concrete trucks will be on site together with concrete pump to access difficult locations.

1.5.5 Logistics

The power plant equipment, depending on ultimate selection, will be predominantly sourced from various overseas locations typically China, Japan, Korea or Europe. Typically, the plant and materials will be transported as bulk break or within containers for the sea passage prior to unloading at Gladstone Port. The equipment will then be loaded and transported to the site.

For this road transport, a transportation study will be undertaken to ensure roads are suitable for the expected loads, underpasses have sufficient clearance and bridges adequate load bearing capacity for the heaviest loads. This study will be undertaken to meet the permitting requirements of Main Roads and Transport.

GTA Consultants have undertaken a road impact assessment for the project (contained as **Appendix D**).

1.6 OPERATIONAL WORKFORCE AND PROCESSES

1.6.1 Operational Workforce

It is estimated that the Galilee Power Station will have permanent staff of approximately 90 for plant operation and supervision of maintenance activities. Most overhaul or shutdown work is likely to be outsourced to specialist sub-contractors. Major maintenance work may be carried out every four years with minor yearly inspection outages. The maintenance workforce during this time could increase up to approximately 100 people. This estimate is provided as an indicative figure only, as the exact number, duration, frequency and types of major maintenance work will be determined during detailed design and operation.

Wherever possible local people will be employed. However, people with significant experience in coal fired power plant and appropriate engineering qualifications will be required to perform the Power Station manager and key technical roles.

Operational workforce may be FIFO, BIBO or DIDO and reside in Alpha during their shifts. However, as for the larger Galilee Coal Project, the intent is to preferentially utilise a local workforce wherever possible, so a proportion of workers are expected to reside in the local community and commute to work daily.

1.6.2 Operation Hours

Operation of the Galilee Power Station will be carried out on a 7-day, 24-hour basis. However, maintenance activities will typically occur during daytime, with the exception of breakdown maintenance for critical systems and critical path work during planned outages or unplanned outages.

The plant instrumentation and control system will be largely automated and will be designed for minimal human machine interface during the 24-hour operation. It is expected that traffic to and from the site during operation will be minimal. The majority of transport on-site will be to and from the accommodation camp by light utility vehicles or shift buses.

Operators, engineers, chemist, technical officers, routine maintenance and administrative staff, emergency response teams and security may be stationed at site. For planned and forced outages, external contractors are likely to be deployed as and when required for the outage duration.

1.6.3 Operations

A permanent complement of operators will be required for the life of the plant. The number of operators required will be primarily dependent upon the level of automation. Operating workload is generally variable. Sufficient operators must be employed to cater for peak workloads. To avoid underutilisation of operators they will receive sufficient training to perform some maintenance. When not occupied with operating, operators will carry out a selection of routine maintenance tasks. Operators will also be trained to a perform troubleshooting and minor breakdown repairs. Maintenance work performed by operators will generally be limited to work that can be performed within the operator's shift.

Operators will work shift work manning the Power Station twenty-four hours a day. Each shift will be eight hours in duration. Five panels, or groups, of operators will be required.

1.6.4 Maintenance

The maintenance workload fluctuates and is particularly high during scheduled outages. If the Power Station workforce is staffed to cater for the peak workload times, there will be insufficient work to occupy staff during non-peak times. Accordingly, the common approach is to employ just enough maintenance staff to cope with routine and defect maintenance. During scheduled outages additional maintenance crews are contracted to supplement the Power Station staff. The selection of a contractor for performance of scheduled outage work should be by competitive tender. Alternatives to the Original Equipment Manufacturer (OEM) may be available at a competitive price.
Breakdown maintenance contracts are often put in place to make available additional resources during emergencies. The selected contractor will need to respond in an agreed and appropriate time.

Using both in-house and contract maintenance crews will provide the Power Station with greater flexibility to respond to electricity demand. At times of high electricity demand outage duration needs to be kept to a minimum. Among other factors, outage duration can be reduced by utilising additional labour. If demand is low scheduled outages need not be carried out in minimum time. If the outage duration is longer, the Power Station maintenance crew may be able to complete all the work without the assistance of contract labour.
Maintenance staff will work day work Monday to Friday.

1.6.5 Generic Services

In the maintenance area there is a mix of specialist and 'non-specialist' work, such as cleaning services. Non-specialist work can be readily out-sourced. A cleaning contractor is in a better position to obtain additional labour to meet the cleaning requirements of the Power Station. If Waratah Coal employs the cleaning staff directly, either excess numbers to normal requirements would be necessary, or a slower response time. Neither choice is satisfactory.

A mixed approach of Waratah Coal employees and contract labour could be utilised for cleaning services. The choice depends on cost and availability of the skills, ability and experience to perform the service. For cleaning services, it is likely that suitable people can be found locally at any time. In the maintenance area the skills, ability and experience are likely to be difficult to find at any time in the local community. Once Waratah Coal has employed its maintenance crew it will be in its interest to train and develop the crew and retain its services; this training will include graduate, apprenticeship and trainee positions. The availability of the skills, ability and experience of the maintenance crew can be assured by directly employing the appropriate people.

Where specialist skills are required infrequently it may be difficult to maintain the required skill level within the power station. In this case service companies may be a better choice depending on cost and availability.

Generic services that may be best provided by service companies are as follows.

- air conditioning
- building maintenance (carpentry, plumbing, painting, tiling)
- canteen, food supplies
- cleaning
- fire protection
- fleet management
- information technology (IT)
- landscaping
- routine greasing
- minor power & lighting
- office machines
- security
- telecommunications

There is a benefit to the community in out-sourcing generic services. The Power Station need for these services will establish or reinforce existing services. If the skills are kept in the Power Station they may be under-utilised and unavailable to the general community. Provision of these out-sourced services will provide a much-needed financial supplement to local and regional service providers.

1.6.6 Plant Responsibilities

Staff will be responsible for breakdown and routine operations and maintenance of the plant listed below. Contractors will perform major maintenance works at major planned outages and possibly unscheduled unit outages.

- main plant (boiler and turbine)
- coal handling plant
- water treatment plant
- ash and dust plant
- coal unloading plant
- station ancillary plant
- high voltage switchyard

1.6.7 Organisation

The employees of the Galilee Power Station will be organised typically with the Station Manager having four direct reports; namely Commercial Manager, Human Resource Manager, Plant Technical Manager and Production Manager. The Production Group will include day-to-day operations and maintenance of the power station. The Commercial Group will manage financial matters, inventory, contract services such as landscaping, cleaning, etc. and provide administrative support to the station. The Human Resource Group will be responsible for training and development, occupation health and safety, industrial relations and recruitment. The Plant Technical Group is primarily responsible for asset management of the power plant. This group will be responsible for providing strategies to ensure that the long-term capability of the power plant meets the business need of the power station. This group will also be responsible for providing technical support to Production's operations and maintenance activities.

1.7 HEALTH AND SAFETY

Modern, best practice health and safety measures will be in place during the Power Station construction, commissioning and operation. Safety in design processes (such as HAZID, HAZOP, risk assessments and SIL studies) will be used during the detailed design stage.

This section provides an overview of the key Power Station safety and security measures.

1.7.1 Site Security

The boundary of the Power Station Disturbance Area will be fenced with security chain link fencing and a security office / gatehouse will be constructed at the entrance to the power station. All entry and exit to / from the site will be highly controlled and personnel will undergo site inductions and drug and alcohol testing prior to entry. In addition, a closed-circuit television (CCTV) surveillance system will be implemented throughout the facility. Placement of the CCTV system will satisfy the dual purposes of both security and plant operational safety requirements. Appropriate lighting will also be provided throughout the site.

1.7.2 Public Safety

Statutory requirements will be enforced and other company initiatives will be implemented to avoid injury to the public from Power Station related activities external to the Power Station area such as materials transport and vehicular movement of workers between the site and mine accommodation. Measures to prevent harm to the public will include fencing, erection of signage, machinery marking, alarms, dust suppression, noise minimisation and safety procedures. Site safety procedures will be implemented and reviewed, as necessary. The public will not be given access to the site; visitors will require Personal Protective Equipment (PPE) and to undergo induction training prior to site access.

1.7.3 Occupational Health and Safety

A site safety plan will be prepared and updated as necessary. The plan will include induction procedures, standard work procedures, random alcohol and drug testing, risk assessment procedures, employee training and all occupational health and safety requirements to ensure statutory compliance, audit and monitoring requirements. All work at the Power Station will be subject to the *Work Health and Safety Act 2001*. During construction, the EPC Contractor will be appointed as Principal Contractor and will be responsible for the management of health and safety on site. During operations, responsibility will fall under the Power Station Manager. During both the construction and operations phases, dedicated safety managers and advisors will be appointed.

1.7.4 Emergency Response

In order to address potential Power Station and weather related emergencies an Emergency Response Plan (ERP) will be developed prior to construction. As a minimum the ERP will consider the type of operation, site hazards, range and training of personnel, site surrounds and available emergency response equipment. A trained emergency response team will be available at site 24/7 to cover any site need.

The Galilee Power Station will identify and record who should receive copies of the ERP. If information changes, there will be a system developed that ensures changes are made to the site ERP and any controlled copies. The ERP will be written in plain English with critical information well indexed and easily referenced. The ERP will consist of several elements that contain relevant information relating to the site including plans and drawings, risk management, first aid requirements, incident control, site contacts, securing the site, procedures for controlling site specific hazards and records.

1.8 CHEMICAL STORAGE

The project will require a number of different chemicals for correct operation. The final chemical process design and required storage volumes will be determined through the detailed design process. A Preliminary Hazard Assessment has been undertaken by Phronis and is attached for your information (**Appendix E**). The site is considered a Hazardous Chemical Facility and State Code 21 has been addressed. The site is not a Major Hazard Facility.

1.9 PROJECT NEED

The Galilee Power Station has been devised as a low-cost, reliable solution to meet the power requirements of energy intensive export industries. Although intermittent renewable power is providing a contribution to the NEM, energy intensive industries require 24/7 reliable, low cost power.

Waratah Coal and other Galilee Basin coal producers will increase demand for power from the NEM; Waratah Coal believes that this demand will be in the order of 500-1000 MW as the Basin develops over the next five to ten years. Waratah Coal has also identified a further 300-500 MW of new demand from coking and Pulverized Coal Injection (PCI) coal developments in the Bowen Basin that will require new generation capacity. Waratah Coal expects that older, sub-critical plant will be withdrawn from the market in 2029 to 2030 and intends that the second 700 MW unit will step in to fill the void left; specifically the second unit is intended to provide sufficient capacity to allow Boyne Smelters to continue to operate after the closure of Gladstone Power Station.

Under a 50% renewable energy policy, there is a positive conservation argument that the remaining 50% of thermal fleet should be as efficient as possible. Retirement of older, sub-critical plant and their replacement with new, HELE plant will result in reduced net emissions simply through an efficiency gain.

Queensland's base load coal fleet comprises of older, higher carbon intensity plant. The oldest base load plant in Queensland is Gladstone, which was first commissioned in 1976, some forty three years ago, and is sub-critical (lower efficiency, higher emissions). The State owned generators of Tarong, Callide B and Stanwell are also sub-critical and were first commissioned in 1984, 1988 and 1993 respectively.

The generally accepted commercial life of a thermal power plant is thirty to fifty years depending upon a range of factors, with Gladstone and Tarong approaching the end of their lives, it is anticipated that there will be a future shortfall of base load generation in the State, notwithstanding the emergence of intermittent renewable power. The 1,400 MW proposed for the Galilee Power Project compares to Tarong's 1,400 MW of sub-critical plant and Gladstone's 1,680 MW.

In displacing or replacing older, less efficient sub-critical plant, the Project will eliminate a substantial volume of carbon emissions due to its higher efficiency.

With the opening up of the Galilee Basin, we anticipate that a number of other mines will progress and seek to draw electricity from the NEM, potentially from a transmission hub at or near the Galilee Coal Project. These developments will increase demand for power in the State, this increased demand will be most efficiently served from a local generation source in the Galilee Basin.

The Galilee Coal Project has been declared a project of State and National significance. The Galilee Coal Project is reliant on the reliable supply of high volume, low cost, efficient and environmentally compliant power to energise the varied infrastructure needs. The Galilee Power Station will provide a reliable and cost-effective supply of fuel for the Power Station combustion and power generation, particularly when compared with a high capital cost transmission line, power purchase and other infrastructure options required to facilitate supply from alternative sources.

1.10 DISCUSSION OF KEY ASPECTS

The proposed Power Station has been designed to address key site constraints and operational impacts. These are discussed below.

1.10.1 Air Quality

An assessment of the air quality impacts from the proposed use during both the construction and operational phases of the Power Station has been prepared by Katestone Environmental (**Appendix A**).

The air quality assessment used a dispersion modelling approach using the TAPM and CALMET meteorological models.

Emission rates and stack characteristics were determined from the manufacturer's specifications, emission limits, and emissions information provided by Waratah Coal. The model was used to predict ground-level concentrations of nitrogen dioxide (NO_2), sulphur dioxide (SO_2), particulates (PM_{10} and $PM_{2.5}$) and metals that will be generated by the Project. The results of the dispersion modelling were then assessed against the relevant air quality criteria for the protection of human health and the environment.

The report made the following observations and conclusions:

- *Construction* - predicted ground level concentrations of NO_2, SO_2, PM_{10} and $PM_{2.5}$ comply with the relevant air quality objectives at all sensitive receptors;
- *Operation* - predicted ground level concentrations of NO_2, SO_2, PM_{10} and $PM_{2.5}$ and metals comply with the relevant air quality objectives at all sensitive residential receptors;
  - predicted ground level concentrations of NO_2, SO_2 and fluoride comply with the relevant air quality objectives at all sensitive environmental receptors;
- The project has the potential to achieve significantly lower GHG emissions intensity, 0.76-0.81kgCO_2-e/kWh in comparison to other coal fired power stations and if this power station replaced older, less efficient power stations has the ability to reduce emissions by as much as 5,500 ktCO_2-e annually.

1.10.2 Noise

The acoustic assessment prepared by Acoustics RB Pty Ltd (**Appendix B**) addressed the potential impact from noise from the Operational Power Station, in conjunction with cumulative noise from the adjoining Galilee Coal Project, on nearby sensitive receptors including the surrounding homesteads, the potential location of a construction workers camp and the Bimblebox Refuge. The report made the following observations and conclusions;

- The level of noise emission at all sensitive receptor premises will be below the applicable noise level limits at all times.

- Should the workers accommodation for the Galilee Coal Project and Power Station be located to the southeast of the Power Station (as was provided for in the Galilee Coal Project EIS), then the camp should be placed in the far south-eastern corner of the proposed camp site to provide the highest level of acoustic comfort for the workers (note though that Waratah Coal are unlikely to construct a camp in this location, preferring instead to utilise a camp to be provided by a third party in Alpha).
- There will be no impact on the Bimblebox Nature Refuge from the steady state noise generated by the operation of the power station.
- Further investigations and assessment are recommended to be undertaken at the detailed design stage when additional information on noise generating equipment is known in case additional attenuation is required to be provided.

1.10.3 Fauna

Potential Direct Impacts

A multi-criteria analysis was undertaken to select the Project Site. Key considerations in the site selection were avoidance of protected vegetation, waterways and habitat for threatened or migratory species. As can be seen from Table 2, the location of the site infrastructure (i.e. the disturbance footprint) avoids remnant vegetation.. The Power Station is located within an extensive area of cleared pastoral land which does not support suitable habitat for any of the listed threatened species that may potentially occur within the area. As such, there will be no direct impact upon threatened or migratory fauna.

Potential Indirect Impacts

Further to the conclusions raised in the Acoustic and Air Assessments on the impact of noise and air emissions on the areas surrounding the Power Station site, a separate investigation was undertaken by Austecology (**Appendix C)** looking specifically at the potential for indirect impacts to threatened and migratory fauna or their habitat as a result of air and noise emissions. The report concluded:

- Given the proposed location of the Power Station, no significant vegetation clearing, or clearing of potential habitat for threatened species would be required;
- The closest remnant vegetation habitats considered to have the potential to support threatened species that may occur within the area are approximately 6 km to the south-west of the centre of the Power Station (although the closest record of a threatened species to the Power Station site is approximately 8.5 km away). The highest predicted noise level at approximately 6 km from the power plant is between 35 and 40 dBA and reduces to below 30 dBA at approximately 8.5 km from the power station. These noise levels are well below those associated with negative impacts to fauna (i.e. ~60dBA). Therefore, based on the noise predictions for the construction and operational phases of the project,

no significant impacts to any threatened or migratory fauna species, or their habitat is expected;

- Based on the air quality emissions predicted for the project, no significant impacts to any threatened or migratory fauna species, or their habitat, is expected.

1.10.4 Flora, Vegetation and Watercourses

A multi-criteria analysis was undertaken to select the Project Site. Key considerations in site selection were avoidance of protected vegetation, waterways and habitat for threatened or migratory species. As can be seen from Table 2, the location of the site infrastructure (i.e. the disturbance footprint) avoids remnant vegetation. Hence, there is no potential for direct impact to conservation significant flora and vegetation. Waterways are also avoided except for one drainage line (which is not mapped as either a 'major' or a 'minor' watercourse on the Queensland Globe interactive tool), which will need to be crossed by the internal site road. This is not expected to result in any significant impact to local waterways.

Indirect impacts in the form of noise are not relevant to flora, vegetation and watercourses.

The air quality assessment and the fauna habitat assessment demonstrated that there will be no exceedance of any of the relevant air quality criteria at any sensitive environmental receptor. Therefore, there will be no indirect impacts to conservation significant flora and vegetation, or watercourses.

1.10.5 Traffic Impacts

A detailed traffic assessment was undertaken by GTA Consultants Pty Ltd (**Appendix D**). This assessment addressed the potential impacts on the project on the State Network as well as the local road network during the construction and operation phases of the project.

The report looks at likely traffic generation from workers and deliveries and the vehicle type to assess what road network upgrades are required. The report concludes that all road links are expected to operate within their capacity and that road safety risk is within an acceptable level.

The report makes two significant recommendations;

- That the intersection of the Capricorn Highway and Saltbush Road be upgraded to accommodate roadtrain movements and to provide queuing clear of the existing rail line;
- That Saltbush Road be upgraded to a sealed road with a width of 8m and 1m verges on either side.

The report also addresses pavement impacts and makes an indication of pavement impact contributions that would be made under a range of operating scenarios.

2.0 SITE HISTORY AND APPLICATION BACKGROUND

2.1 EXISTING SITE CHARACTERISTICS

The subject site is a large rural property known as "Monklands". The site is accessed from Monklands Road via the Capricorn Highway. The site is rural and has been used for cattle grazing and has improvements generally associated with rural pursuits (fencing, yards, dwellings and workshops). As the proposed Power Station is only associated with part of the site, the balance of the land will form part of the proposed coal mining operations.

2.2 PREVIOUS APPROVALS / REFUSALS / UNAUTHORISED USE

There have been no previous planning applications over the land. Part of the subject site along with neighbouring sites form part of a Mining Lease generally described as the Galilee Coal Project being undertaken by Waratah Coal.

2.3 DETAILS OF PRELODGEMENT ADVICE

Pre-lodgement Meetings were held with both DSDMIP and Barcaldine Shire Council. The location of the Power Station discussed at the initial meetings with Council and DSDMIP changed slightly and a second meeting with DSDMIP was held. The details of the meetings are addressed in the following section.

Meeting with State Agencies – 24 April 2019

A meeting was held in the Mackay Offices of DSDMIP with representatives from the following State Agencies;

- DNRME (Energy)
- DNRME
- DTMR
- DES
- DAF
- DSDMIP
- Major Hazard Facilities

A copy of the meeting minutes have been included as **Appendix F.** In summary the response to the matters raised are as follows;

(a) Waterway Barrier Works

Some mapped drainage lines exist through the site. It is likely that one crossing of a low level drainage line will be required. During the detailed design the exact location of the crossings will be established and assessed against the Accepted Development requirements. Based on preliminary investigations it is likely that the crossing will be designed to comply with the Accepted Development Requirements and as such no application will be required.

(b) State Controlled Road

A Traffic Impact Assessment has been completed for the site. This assessment includes the proposed impact on the adjoining State Controlled roads during the construction and operation phases of the project.

(c) Major Hazards

State Code 21 provides assessment benchmarks Major Chemical facilities. A full assessment against State Code 21 has been included in Section 5 of this report.

(d) DNRME (State Land Asset Management)

The subject site is Freehold. Owners consent has been provided.

(e) Vegetation Clearing

The Project Site is maintained in a predominantly cleared state to facilitate the current pastoral operations. The remnant Regional Ecosystem (version 11) mapping confirms that there is some Category B – "of Least Concern" Remnant Vegetation on the site. The Power station disturbance area has been designed to avoid any clearing of this vegetation.

(f) Water

One of the issues raised was how water will be provided to the power plant if dewatering activities should cease. Whilst the Power Station application has assumed that ample water will be available from the dewatering of the mine, should water not be available in large quantities, the plant has actually been designed to be air-cooled meaning that the plant could be operated on a minimal water supply compared with wet cooling methods. Groundwater studies to support the Galilee Coal Project indicate that ample water is available, and would continue to be available post closure of the Galilee Coal Project, should mining and dewatering activities as part of that project cease prior to the closure of the Power Station.

(g) Environmentally Relevant Activities

The proposed development potentially triggers the following ERAs. The trigger and the relevant SDAP modules are addressed in Section 4 of this report.

1. ERA 14: Electricity Generation;
2. ERA 56: Regulated Waste Storage (Fly Ash Storage)
3. ERA 8: Chemical Storage;
4. ERA 63: Sewerage Treatment;
5. ERA 64: Water Treatment.

Meeting with State Agencies – 18 November 2019

A meeting was held in the Brisbane Offices of DSDMIP with representatives from the following State Agencies;

- DNRME (Energy)
- DNRME
- DTMR
- DES
- DAF
- DSDMIP
- Major Hazard Facilities

A copy of the meeting minutes have been included as **Appendix G.** In summary the response to the matters raised are as follows;

(a) Major Hazards

It was confirmed that the use does not Trigger an ERA for Major Hazard Facility but does Trigger Assessment under State Code 21 as a Hazardous Chemical Facility which requires a Development Permit and referral to the State. A preliminary Hazard Report addressing the State Code was recommended. This has been provided and is attached.

(b) Waterway Barrier Works

DAF noted that the application should also address the impact on the crossing external to the site which may be affected by the site entry. This has been assessed and it is

considered that the crossing can be designed to meet Accepted Development Requirements.

Furthermore, the proposed dams were identified as a potential cause of fish entrapment and should be designed to not allow fish access. This is noted and can be addressed during the detailed design stage. It is suggested that this requirement could be included as a condition of approval.

(c) Transport

Whilst the Public Utility does not Trigger Referral to DTMR it has been agreed that the application will be provided by the Local Authority for Third Party Assessment. The Traffic Report has been updated to address the matters raised by DTMR relating to the proposed upgrading of the Saltbush Road, Capricorn Highway Intersection.

(d) Clearing Native Vegetation

It is noted that as no clearing is proposed the application will not require referral. A firebreak/safety buffer of 20m or 1.5 times the vegetation height will be required. This has been provided as the setback is generally between 65m and 85m to the existing remnant vegetation.

(e) Water Use

It is noted that associated water licenses will be required and appropriate approvals will be required through the Mine Approvals process.

(f) Electricity Planning

DNRME confirmed that a generation authority will be required to connect to the grid. This is separate to the Development approval process.

(g) Environmentally Relevant Activities

It is confirmed that the following ERAs are triggered

1. ERA 14: Electricity Generation;
2. ERA 16: Extractive and screening activities;
3. ERA 50: Mineral and Bulk Material Handling;
4. ERA 60: Waste Disposal
5. ERA 63: Sewerage Treatment;

(h) Air Quality Issues

The attached table sets out the responses to the queries raised through the pre-lodgement meeting response. A technical memo is also attached (**Appendix H**) to address the calculation methodology for the input data provided to Katestone Environmental for modelling.

Further detail is included in this document (Section 1.4.5) describing the operation and design of a typical wet limestone slurry scrubber.

The limestone for the project will be sourced from a number of commercial limestone mines in the Gladstone and Rockhampton region. Potential commercial sources of limestone include the Omya mine near Bajool, the Graymont mine near Lake Awonga or Cement Australia's East End mine near Gladstone.

Regarding depth of the gypsum market – Gypsum is used for a number of commercial purposes including agriculture (fertiliser), aquaculture (fish farm flocculation), industrial (manufacturing of plasterboard and cement) and civil works. Global gypsum production in 2013 was 160 million tonnes[1]. The global gypsum market is expected to increase from $2.2Bn to $3.4Bn from 2018 to 2028[2] as demand for sustainable building materials and sustainable fertiliser increases. Australia's largest gypsum mine is Lake MacDonald, in South Australia, with an annual production of 3.5 million tonnes. Waratah Coal is confident that the quantity of gypsum produced by the Project to be made available to the market will be readily absorbed in the market

In the unlikely event that all of the gypsum cannot be sold or otherwise repurposed, the Waste Containment Facility is able to be used for storage of gypsum as it has been sized for dry lime injection (which does not produce gypsum) as a worst case option.

(i) Stormwater Management

A preliminary stormwater management plan has been prepared by Phronis and has been included as **Appendix I** to this report. This plan provides information on potential sources of contamination, and how stormwater runoff will either be diverted around stockpiles or how contaminants will be managed within the site.

No contaminants will be released in water from the site as the site will be zero liquid discharge.

(j) Surface Waters

j.i) Unmapped tributary of Lagoon Creek

The site was selected to avoid waterways. The 'unmapped tributary' referred to on the project site is assumed to be that depicted on Figure 1 of **Appendix J**. Examination of the project area using the 'Major' and 'Minor' Watercourse functions in the Queensland Globe online interactive tool reveals that this drainage line is not mapped as either a 'Minor' or a 'Major' watercourse. However, watercourses to the immediate north and south of the drainage line in question are mapped as minor watercourses on Queensland Globe, and the dam located along the drainage line in question is also mapped as a 'reservoir' on Queensland Globe (see Figure 1 of **Appendix J**). This suggests that there has been previous examination of the area for the purpose of

[1] http://energymining.sa.gov.au/minerals/mineral_commodities/gypsum
[2] https://www.smithers.com/resources/2018/may/key-gypsum-market-trends-to-look-out-for

watercourse mapping, in which the drainage line in question has not been deemed to be a watercourse for the purposes of the *Water Act 2000*.

A site inspection has been undertaken, and photos and information gathered from the landholder have been provided in **Appendix J** to demonstrate that the drainage line does not support the usual features associated with mapped waterways. Given the above, for the purposes of this assessment, it is concluded that the drainage line does not meet the definition of a defined waterway. As mentioned above, **Appendix J** provides the supporting information to assist the Department of Natural Resources, Mines and Energy in determining whether the drainage line in question meets the criteria to be defined as either a 'Watercourse' or 'Drainage Feature' as is defined in Part 2, Section 5 and Schedule 4 of the *Water Act 2000*.

j. ii) Drainage line water quality and seasonal variations in water quality and flow rate

In relation to the query regarding the environmental values and nature of the drainage line in question, including quality of waters and any seasonal variations in water quality and flow rate, the area subject to the Development Application was formerly part of the Mining Lease Application Area for the Galilee Coal Project. The water quality and seasonal variations in the water quality and flow rate of Lagoon Creek and its catchment were assessed as part of the EIS for that project and are summarized in Section 3.2 of this application.

The Galilee Power Station will be a zero discharge facility. As such, there is minimal potential for impacts to surface waters as a result of the project. The potential risks to surface waters from accidental spills and catastrophic events will be managed via standard mitigation and management measures that will be outlined in the project Environmental Management Plan.

j. iii) Frequency and Duration of Flood Events and Flood Management

The site was selected to minimise the potential for flooding. As mentioned above, the area subject to the Development Application was formerly part of the Mining Lease Application Area for the Galilee Coal Project. Flood modelling undertaken for that project demonstrates that the 1:1000 ARI flood events do not impact the site.

(k) Groundwater

k. i) Consideration of potential impacts to groundwater

The potential for impact to groundwater as a result of the project has been considered and the risks have been addressed through the project design. The groundwater values of the area are well understood as a result of the Environmental Impact Assessments that have been undertaken to support the approvals for the adjacent Galilee Coal Project (as mentioned above, the area subject to the Development Application was formerly part of the Mining Lease Application Area for the Galilee Coal Project). Section 3.4 of this application provides a summary of the groundwater values in the project area, and the previous groundwater investigations that have been undertaken.

Key aspects of the Power Station project design that minimise the risk of impact to groundwater are:

- There will be no impact to groundwater quantity as a result of the project as no take of groundwater to support project construction or operation is required
- There will be no discharge of water from the site

- The Waste Containment Facility will be fully lined to prevent leaching of materials (refer to Section 1.4.8 of this application)

- All chemicals used on site will be stored, managed and utilised in an appropriate manner as will be outlined in the Project Environmental Management Plan.

k. ii) Provide details of the potential impact extraction of groundwaters on standing water levels and bore pressures in any adjoining properties.

In relation to 8(b), there is no extraction of groundwater proposed as part of the Galilee Power Station project, as all water for the Power Station will be sourced from the Galilee Coal Project dewatering activities, hence dewatering activities do not form part of this application. The potential impacts of the dewatering activities associated with the mine have been considered as part of the granted approvals for that project, and continue to be addressed though the Galilee Coal Project Environmental Authority process which is currently being undertaken. Refer to the Galilee Coal Project EIS documentation for details of the potential impacts to groundwater as a result of that project.

k.iii) Detail on investigations into groundwater dependent ecosystems

In relation to point 8(c), the area does not contain groundwater dependent ecosystems. As mentioned above, the groundwater values of the area are well understood as a result of the Environmental Impact Assessments that have been undertaken to support the approvals for the adjacent Galilee Coal Project (as mentioned above, the area subject to the Development Application was formerly part of the Mining Lease Application Area for the Galilee Coal Project). The following conclusions with reference to Groundwater Dependent Ecosystems were drawn as part of the EIS process:

- Stygofauna
    - Only two common stygofauna taxa (phreatobites) were recorded in a low abundance on the project site
    - The two phreatobite taxa recorded are not endemic at the Family/Order level of taxonomic resolution and these taxa would occur both locally and regionally outside the project area and so were not considered to be significantly affected by the proposed mining operations
- Surface Groundwater Dependent Ecosystems ((i.e. vegetation communities and wetlands)
    - the groundwater modelling to support the Galilee Coal Project EIS elucidated that the depth to the regional watertable across the Project site is too great to support surface groundwater dependent ecosystems
    - as part of the SEIS process there was a specific query with reference to *Melaleuca tamarascina* which can form part of a groundwater dependent ecosystem. Further to the fact that the regional groundwater table across the site is too deep to support vegetation, the occurrences of *Melaleuca tamarascina* were within areas mapped as Regional Ecosystem (RE) 10.5.1g. RE 10.5.1g is not classified as a wetland. Furthermore, subsequent discussions with Bruce Wilson (Qld Herbarium, pers. comm. 21 June 2013), revealed that it is known that this species can have a groundwater association on Land Zone 7 – however, across the

Project area it occurs on Land Zone 5 (i.e. the second of the three numbers in the R.E code is the land zone).

- It is worth noting that the Alpha Coal and South Galilee Coal Projects (SGCP) to the immediate north and south of the Project (respectively) also detected no groundwater dependent ecosystems on either site. The SGCP found that the depth to the regional water table typically exceeded 10 m, whilst the Alpha Coal Project found that it typically exceeded 20 m. As has been the case for the Galilee Coal Project, both concluded that at this depth, the regional water table was not available to the existing vegetation.

(l) Waste Containment Facility

A number of options relating to waste disposal have been considered, including within mine voids. The preferred option was to construct purpose built Waste Containment facilities as the Power Station will be fed from underground mines rather than open pit mines. The lining of open pit mine voids for ash disposal is a proven ash disposal method; however, a similar technique has not been developed for underground longwall mines.

The proposed liners are described within this report and are the best practice technology for Waste Containment. A detailed cross section of the liner has been included in the attached plans.

With respect to 9(d), the facility has been designed so that zero water will be discharged from the site. A reverse osmosis plant will treat water for reuse within the facility.

The Ash Containment Facility has been located so that it is not within the extent of a 1:1000 year ARI flood event. Stormwater management controls will be designed as part of the detailed design of the Waste Containment Facility to ensure that runoff during an extreme storm event is managed.

(m) Acoustic

There is no workers accommodation proposed at the Power Station site. This was an option that was previously considered as part of the approved Galilee Coal Project EIA, however has now been removed in favour of workers accommodation being provided by a third party in Alpha. This application does not include workers accommodation.

2.4 COMMUNITY CONSULTATION

The proposal has been discussed a number of times with representatives from Barcaldine Regional Council. The applicants have also discussed the project with affected landholders in the immediate vicinity of the site.

Whilst the proposed use is separate to the Galilee Coal Project, it should be noted that extensive work has been undertaken in the Region in connection with the Galilee Coal Project, including a detailed Social Impact Assessment and Social Impact Management Plan as part of the Galilee Coal Project Environmental Impact Statement. As such, existing local and regional resident groups are aware of the Galilee Coal Project, and a number of other planned coal mining projects in the area.

A summary of the consultations undertaken as part of the Galilee Coal Project Environmental Impact Statement is provided below. The public consultation described covers a period of approximately three years and covered a wide range of stakeholders. During this period over 1,000 job seekers and 600 suppliers contacted Waratah Coal to register interest in the project.

- The initial public consultation program (during the EIS preparation) included the preparation of a range of maps, publications and presentations; two rounds of community meetings (which included meetings with five regional councils and a total of 15 public meetings); and the provision of several alternative mechanisms to contact Waratah Coal to request information or provide comment;
- Waratah Coal has had a representative based at Alpha during the preparation of the EIS, between 2008 and 2013. The site representative facilitated the exchange of information and promoted the various mechanisms to access information or provide comment;
- Waratah Coal participated in the following two groups that existed at the time of writing the EIS. The groups were established to exchange information between resource project proponents and local communities. The groups were: South Galilee Coal community and technical reference groups, and the Galilee Basin Cumulative Social Impact Assessment Roundtable;
- Consultation during the preparation of the Supplementary EIS focused on detailed consultation with key government agencies, and a third round of community meetings (eight meetings in all), in which the results of the EIS were presented and discussed.

3.0 EXISTING SITE CHARACTERISTICS

3.1 LAND

3.1.1 Geology

The Power Station site is situated in the Galilee Basin, which covers nearly 250,000 km^2 of Central Queensland. The Galilee is connected to the Bowen Basin over the Springsure Shelf (south east of Alpha). In the project area, the target geology is held within the Bandanna Formation and Colinlea Sandstone, correlatives of the Bowen Basin's Group IV Permian Rangal Coal Measures.

The surface geology of the Power Station site and surrounds is dominated by unconsolidated sediments of Cainozoic (recent geological period) origin. These sediments include unconsolidated sands, silts and clay, lateritised in part and form an extensive blanket over the mine area. Depths of these sediments vary across the site and range up to 90 m in the eastern and central sections of the Mining Lease area (near the Power Station site).

The construction and operation of the Galilee Power Station will not impact upon the geology of the Project Area, and no particular constraints from the site geology on the Power Station are envisaged.

3.1.2 Topography

The topography of the Power Station site at Monklands ranges from 350-360 m AHD.

The construction and operation of the Galilee Power Station will not impact upon the topography of the Project Area, and the proposed site infrastructure will be located in relatively level areas which are not anticipated to present challenging conditions for the construction of the Power Station.

3.1.3 Soils

Soil investigations conducted to support the Galilee Coal Project EIS indicate that Kandosols are the dominant soil type in the area, and the soil type present in the Power Station site.

Kandosols are structureless, mostly well drained permeable soils although some yellow and most grey Kandosols have impeded sub-soil drainage. Most Kandosols have low fertility and land use is limited to grazing and native pastures. Grazing lands are susceptible to surface soil degradation such as hard setting and crusting even when grazing intensity is low.

Outside of the Power Station site, the construction and operation of the Galilee Power Station will not impact upon the soils of the Project Area. Post-closure, the plant will be dismantled and removed, the dams will be retained and will be converted for stock watering dams and the infrastructure areas will be rehabilitated by cover areas with topsoil to establish native vegetation and/or other suitable land use plantings (e.g. improved pasture).

3.1.4 Land Use

The current land use in and around the Power Station site is cattle grazing on natural vegetation and improved pastures. The Power Station will be situated on "Monklands" which is a freehold parcel and has been extensively cleared and converted to improved pasture.

3.1.5 Conservation Tenure

One lot on the Mining Lease (Lot 4 on BF22), known as the Bimblebox Nature Refuge, is a Nature Refuge gazetted under the *Nature Conservation (Protected Areas) Regulation 1994* of the *Nature Conservation Act 1992*. Nature Refuges are a voluntary arrangement between the State and the landowners to protect biodiversity values whilst still allowing for compatible land uses to occur. The Power Station site does not intersect any part of the Bimblebox Nature Refuge. The centre of the Power Station site is around 12-13 km from the centre of the Bimblebox Nature Refuge.

There are no 'world heritage properties' or 'natural heritage places' within or in proximity to the site. There are no RAMSAR wetlands or any wetlands listed under the 'directory of important wetlands' within or near to the site.

3.1.6 Visual Amenity

The region containing the Power Station is classified as 'Capricornia Uplands' (Department of Transport and Main Roads, Road Landscape Manual 2004). The Capricornia Uplands is an area of flat to gently undulating farmland, woodland and forest. The majority of the region is sparsely populated and vegetated.

The landscape visual character is shaped by the continuous open vegetation cover, which displays the mosaic of plant varieties characteristic of the topography and soil types, combined with impacts of low intensity grazing. In developed areas, this character is changed subtly with more cleared patches and cropping patterns typical of rural areas. Within the vicinity of the Power Station, with the exception of the Bimblebox Nature Refuge, and a few other isolated heavily vegetated pockets, the landscape has predominantly been cleared of native vegetation to facilitate cattle grazing, resulting in grasslands with some shrubs and scattered trees.

The most obvious visual feature of the Power Station will be the chimney stack. Based on the modelling of air emissions, the chimney stack for the Galilee Power Station would need to be to be 100 metres tall to ensure that air quality objectives set out under the Queensland Environmental Protection (Air) Policy 2008 (Air EPP) will be met at the relevant sensitive receptors. Flue gas desulphurisation allows the stack height to be lower than that for comparable coal fired power stations in Australia due to the superior emission rate of SO_x. At 100m high, the stack is likely to be visible at nearby homesteads and local roads but is unlikely to be visible from the nearby townships or the Capricorn Highway.

3.2 SURFACE WATER

The existing surface water resources and values have been the subject of a number of studies to support the Environmental Impact Assessment for the Galilee Coal Project. As such, the surface water resources and values are well understood. A summary is provided below, and the full studies can be found in chapter 4 of Volume 2, of the EIS for the Galilee Coal Project. These documents are publicly available and can be accessed via the Queensland Co-ordinator General's website.

3.2.1 Regional Drainage Network

The Power Station site is located within the Belyando/Suttor River sub-basin which forms part of the larger Burdekin River basin. The Power Station site drains to Saltbush Creek, which is a tributary of Lagoon Creek. Lagoon Creek continues to flow in a northerly direction downstream of the Power Station site before joining with Sandy Creek which discharges into the Belyando River around 70 km downstream of the Power Station site. The Belyando River flows in a generally northerly direction before discharging into the Suttor River approximately 200 km downstream. The Suttor River then also continues in a northerly direction before discharging into the Burdekin River within the reservoir area of Lake Dalrymple (Burdekin Falls Dam).

3.2.2 Local Drainage Network

Waterways in the vicinity of the project are highly ephemeral with long periods of little of no flow with the majority flow generating rainfall events occurring between December and February.

3.2.3 Water Quality

The waterways around the Power Station have been subject to a range of modifications and pressures including the damming of creeks for stock irrigation, riparian vegetation clearing for agricultural purposes, and the trampling of bed and banks through cattle access to creeks. Causeways are present on a number of waterways, though in most cases, these represent a localised disturbance that only affects bed and bank stability and adjacent turbidity levels. This has had follow on effects on the water quality of the waterways, with studies undertaken as part of the Galilee Coal Project EIAs revealing that the water quality in waterways in and around the Mining Lease was generally characterised by elevated electrical conductivity, low levels of dissolved oxygen and elevated turbidity. Nutrients levels in waterways were also elevated and median values for ammonia, nitrite + nitrate, total nitrogen and total phosphorus all exceeded the DERM (2009) guidelines for 95% ecosystem level protection of slightly to moderately disturbed upland Central Queensland streams.

The Power Station will be zero liquid discharge and is therefore unlikely to adversely impact water quality directly. However, the construction and operation of the Power Station has the potential to impact upon the waterways in the region via the following pathways if not managed properly:

- clearing of vegetation and topsoils resulting in sediment movement though overland flow

- storage of chemicals on site (e.g. hydrocarbons, detergents and degreasers) during construction and operations and the movement of these to streams, and
- storage, seepage and overtopping of water from the Waste Containment Facility.

In order to reduce the potential for impacts to downstream water quality, the site has been designed with the appropriate erosion and sediment controls and chemical storage facilities. Furthermore, the Waste Containment Facility will be lined with a composite liner and designed so that the floor grades away from the deposited ash and run-off water will be drained to the Ash Runoff Water Dam, where it will be either utilised for dust suppression on the Waste Containment Facility, evaporated or re-used in the ash system.

The environmental management plan for the Power Station will set out management and monitoring measures to minimise the potential for contamination of receiving waters during construction and operation of the Power Station.

3.2.4 Water Quantity

The Power Station will source its water from excess water produced from dewatering of the adjacent mines within the Galilee Coal Project. The mine dewatering will produce an excess of 3,740 ML per annum, which will be managed via evaporation. Hence, the requirement of the Power Station for 1,374 ML per annum can easily be accommodated via this excess mine water, and provides for a beneficial reuse of this water.

The Power Station has been designed to be air-cooled, which means the water requirement is greatly reduced as compared to plants employing traditional evaporative cooling. As such, should the Power Station continue to operate post mine closure, the water requirements of the plant could easily be accommodated via a traditional drilled bore.

3.3 FLOODING

A flood study was undertaken as part of the Galilee Coal Project EIAs to understand flood behaviour including flood depths, extents, velocities and other hydraulic impacts to the waterways. This information was used to assist in the selection of the Power Station site. The location of the Power Station is not flood affected, as the site was selected to lie above the 1:1000 ARI flood event.

A hazard assessment will be undertaken for the dams associated with the Power Station in accordance with the Queensland DES Manual for Assessing Consequence Categories and Hydraulic Performance of Structures to determine the likely impacts on downstream waterways and lands in the event of failure of the dams and levees (DES, 2016). Dams that are likely to contain contaminated water or solids, will be designed with sufficient storage capacity to prevent discharges of contaminated water in accordance with the DES Manual.

3.4 GROUNDWATER

The area subject to the Development Application was formerly part of the Mining Lease Application Area for the Galilee Coal Project and the assessment of groundwater impacts is presented in Chapter 8 of Volume 2 and Appendix 14 of the EIS for the Galilee Coal Project. These documents are publicly available and can be accessed via the Queensland Co-ordinator General's website.

In summary though, the assessment approach involved a desk top review of available groundwater information and a range of field studies focused largely on geophysical surveys, existing bore surveys, installation and sampling of monitoring bores, aquifer testing and stygofauna sampling. Predictive numerical modelling was undertaken to assess the impact of the mine on the groundwater regime.

In response to comments on the groundwater assessment during the EIS consultation stage, extensive further work was undertaken for the SEIS (see SEIS Volume 2, Appendix 43) with particular emphasis on expanding the groundwater monitoring network to improve base-line data and in preparing a new predictive numerical model to assess groundwater drawdown, impacts and groundwater inflows to the mining operation. The revised model extends 130 km from the west of Jericho to the eastern boundary of the Galilee Basin and extends 120 km in a north-south direction to ensure coverage of sensitive groundwater receptors—particularly the Great Artesian Basin springs. The model contains 11 vertical layers to model the stratigraphic sequence and complies with the Murray Darling Basin Commission Groundwater Flow Modelling Guidelines and the Australian Groundwater Modelling Guidelines. The findings from the SEIS groundwater assessment largely confirmed the conclusions reached in the EIS.

As a result of this past work on the project site, the groundwater values of the area are considered to be well understood.

In terms of potential impacts to groundwater, as a result of the Power Station, as a zero liquid discharge project with a fully lined Waste Containment Facility, contamination of ground water is considered unlikely. Details regarding the Waste Containment Facility are given on Section 1.4.8. Details regarding the preliminary stormwater management plan to manage the risk of contaminants leaving the site are contained in **Appendix I**.

Groundwater sourced from dewatering the Galilee Coal Project underground mines will be used in the Power Station. The impacts to local and regional groundwater tables as a result of the mine drawdown were assessed as part of the Galilee Coal Project EIAs, and mitigation and management measures were devised. The operation of the Power Station will not require any additional drawdown of groundwater, hence there will be no ongoing impacts as a result of the Power Station to groundwater levels.

Initial 'start up' water for the Power Station is required. It is estimated that this will be in the order of 200 ML. This will also be sourced from Galilee Coal Project mine dewatering operations, which will commence two years in advance of mining and power plant operations, and water will be stored within mine operational storage dams.

If not managed properly, there is the potential for groundwater contamination from spills and leaks (from chemical, fuel and oil storage and handling at workshops and dams), however this is considered unlikely because:

- appropriately constructed storage and handling will result in low potential for leakages or spills,
- staff will be trained to respond, manage and report any spill; procedures will be in place to manage such an event; spill kits including oil absorbents will be strategically placed where a spill may potentially occur, and
- groundwater levels around the site are generally deep and will become deeper due to drawdown around the mine.

The Environmental Management Plan for the Power Station will include measures to ensure proper storage, handling and disposal of hazardous materials. The Waste Containment Facility will be lined with a composite liner to prevent possible leakage of contaminants into groundwater.

3.5 AIR

3.5.1 Existing Environment

As the Power Station will be located in a rural area without existing mines and urban pollution, the current air quality is typical of a central Queensland rural area. Existing emission sources on air quality are relatively low, and result primarily from agricultural land use practices, and regional dust storms and fires.

An air quality assessment has been undertaken and is attached (**Appendix A**).

3.5.2 Potential impacts

The Power plant will include low NO_x burners, bag filters and flue gas desulphurisation in order to minimise emissions rates. Waratah Coal intends that, when commissioned, the Galilee Power Project will be the cleanest coal fired power plant in Australia, measured by any metric.

Air pollutants will be generated by combusting coal from the Galilee Coal Mine in the boilers of the power station. The key air pollutants that may be emitted to the atmosphere by the project are oxides of nitrogen (NO_x), carbon monoxide (CO) and carbon dioxide (CO_2). Particulates in the form of PM_{10} and $PM_{2.5}$, sulphur dioxide (SO_2) and metals may also be present at trace levels.

An assessment of the air quality impacts from the proposed use during both the construction and operational phases of the Power Station has prepared by Katestone. The report has made the following observations and conclusions:

- *Construction* - predicted ground level concentrations of NO_2, SO_2, PM_{10} and $PM_{2.5}$ comply with the relevant air quality objectives at all sensitive receptors;
- *Operation* - predicted ground level concentrations of NO_2, SO_2, PM_{10} and $PM_{2.5}$ and metals comply with the relevant air quality objectives at all sensitive receptors;
  - predicted ground level concentrations of NO_2, SO_2 and fluoride comply with the relevant air quality objectives at all sensitive environmental receptors;

- The project has the potential to achieve significantly lower GHG emissions intensity, 0.76-0.81kgCO_2-e/kWh in comparison to other coal fired power stations and if this power station replaced older, less efficient power stations has the ability to reduce emissions by as much as 5,500 ktCO_2-e annually.

3.6 NOISE

3.6.1 Existing Environment

The current noise environment at the subject site is predominately composed of a variety of noise sources such as insects, birds and frogs, ongoing low intensity farming, vehicle noise and weather induced noise.

3.6.2 Potential impacts, mitigation and management measures

The Power Station will produce constant noise. These noise emissions from the Power Station will be maintained to levels consistent with the *Environment Protection (Noise) Policy 2008* (Qld) (Noise EPP). A detailed acoustic assessment has been developed to assess the contribution of the proposed plant at sensitive receptors.

The acoustic assessment prepared by Acoustics RB Pty Ltd (**Appendix B**) addressed the potential impact from noise from the Operational Power Station on adjoining sensitive receptors including the surrounding homesteads, construction workers camp and the Bimblebox Refuge. The report made the following observations and conclusions;

- Based on the noise predictions in the report, the level of noise emission at the relevant receptor premises is within the noise level target for those receptors although the report does suggest that further investigations and assessment be undertaken at the detailed design stage when additional information on noise generating equipment is known which may require additional attenuation to be provided.
- That, should the workers accommodation for the Galilee Coal Project and Power Station be located to the southeast of the Power Station (as was provided for in the Galilee Coal Project EIS), then the camp should be placed in the far southeastern corner of the proposed camp site to provide the highest level of acoustic comfort for the workers (note though that Waratah Coal are unlikely to construct a camp in this location, preferring instead to utilise a camp to be provided by a third party in Alpha).
- That there is no impact on the Bimblebox Nature Refuge from the steady state noise generated by the operation of the power station.

The actual acoustic impact of the plant will be tested during the commissioning phase.

3.7 NATURE CONSERVATION

3.7.1 Threatened Ecological Communities and Regional Ecosystems

Field surveys undertaken for the Galilee Coal Project EIAs have confirmed that no Threatened Ecological Communities listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) occur within 5 km of the Power Station Site.

There are no areas of mapped remnant Regional Ecosystems (REs) prescribed under the Queensland *Vegetation Management Act 1999* (VM Act) within the Power Station Disturbance Area. However, there are two areas of RE within the MCU application area. These are the distal ends of two relatively narrow linear bands of mixed polygon Least Concern remnant Regional Ecosystem (RE). The closest extent of the western patch of vegetation to the stack is 375 m, and the closest extent of the eastern patch of vegetation is 475 m. The closest extent of either the access road or the haul road is 65 m to the western patch, and 86 m to the eastern patch (see **Figure 15**). Both of the narrow bands of vegetation are composed of a mixed polygons of Least Concern RE. The composition is 70% RE 10.5.5a; 15% RE 10.5.12; 10% RE 10.3.27a, and 5% RE 11.5.5. Pre-clearance vegetation surveys will be undertaken to clearly marked the boundaries of these areas to ensure they are not impacted by the construction activities.

The potential for indirect impacts to remnant Regional Ecosystems as a result of air emissions from the Power Station were assessed against the Queensland Environmental Protection (Air) Policy 2008 as part of the airshed modelling for the Power Station (see **Appendix C** Fauna Assessment report by AustEcology).

The Queensland Environmental Protection (Air) Policy 2008 is the only emissions regulation in Australia that sets standards in regard to biodiversity, with one of the key environmental values to be protected, being the qualities of the air environment that are conducive to protecting the health and biodiversity of ecosystems (section 7 (a)).

Air quality objectives relevant to biodiversity are identified for the following indicators: Fluoride; NO_2, Ozone, and SO_2. The modelling of air emissions from the Power Station undertaken by Katestone Environmental demonstrates that concentrations of Fluoride, NO_2, Ozone, and SO_2 in the emissions from the proposed power plant and background, even under worst case scenarios, are well below nominated thresholds and thus, are not expected to exceed the threshold air quality objectives. Hence, by definition of the Queensland Environmental Protection (Air) Policy 2008, there will be no significant impact to biodiversity values (including remnant Regional Ecosystems) as a result of the operation of the Power Station.

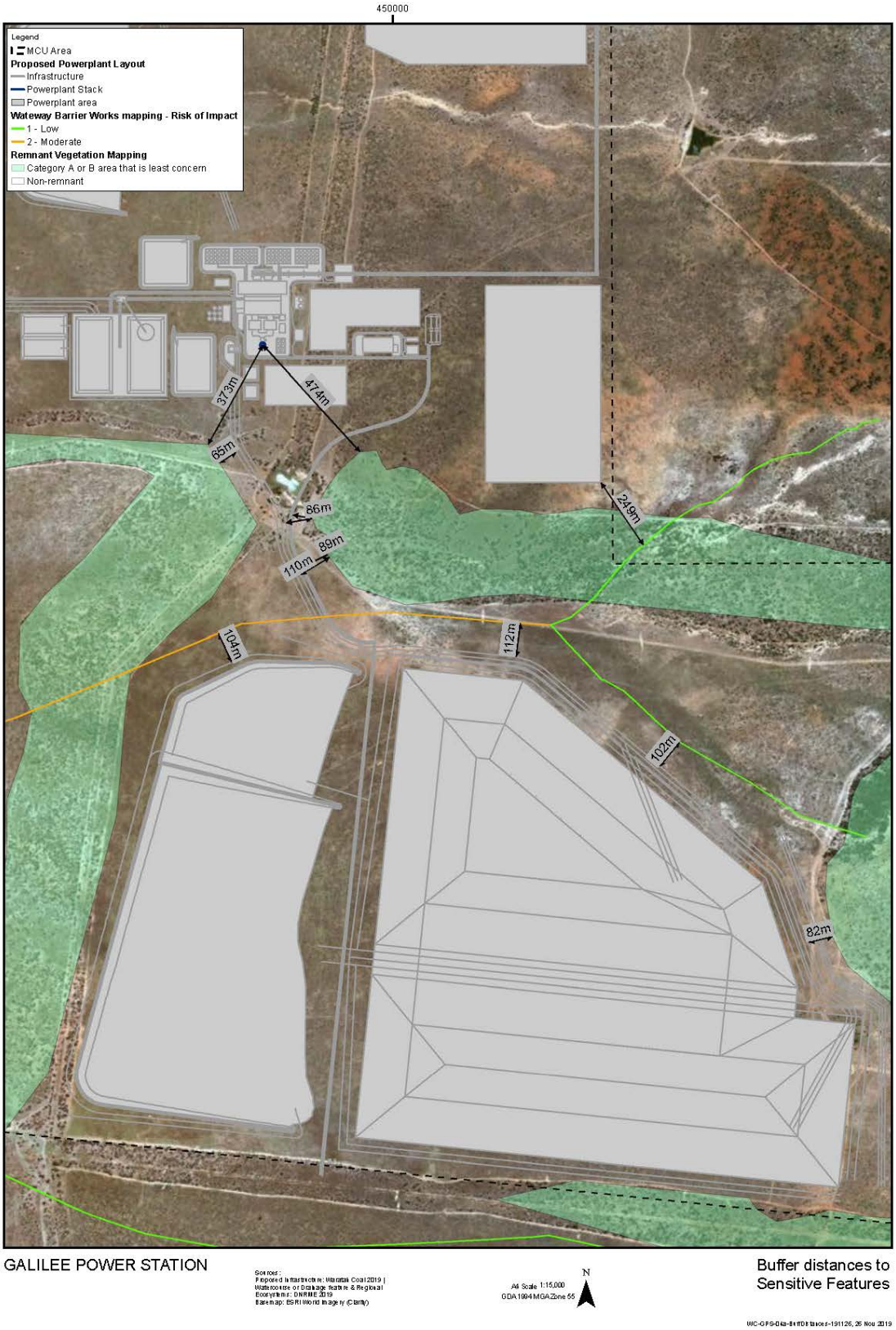


Figure 15: Vegetation buffers

3.7.2 Conservation Areas

The Bimblebox Nature Refuge, listed in Schedule 5 of the *Nature Conservation (Protected Areas) Regulations 1994*, occupies an area of 7,912ha within the Mining Lease. The BNR is removed from the footprint of the Power Station by around 6 km at its closest extent and so will not be directly affected by construction or operation.

The potential for indirect impacts as a result of air and noise emissions from the Power Station have been addressed in the attached specialist reports. The reports demonstrate that there will be no significant impacts to the Bimblebox Nature Refuge as a result of noise or air emissions.

3.7.3 Flora

The project area is embedded within the Desert Uplands Bioregion. The Desert Uplands was settled by pastoralists during the 1860s and 1870s (DNRW 2006). The majority of land tenure within the surrounding region is leasehold (about 80%) with the remainder comprising freehold, reserves and other tenures in small land (ANRA 2009).

The Power Station site is located within an extensive area of cleared land which is subjected to ongoing land disturbance in the form of pastoral operations. As such, it does not support suitable habitat for any of the threatened flora species that potentially occur within the surrounding area. Hence there is no potential for any direct impact to any conservation significant flora as a result of the construction and operation of the Project. Assessment of the potential for indirect impacts as a result of air emissions has demonstrated that there will be no significant impacts to any remnant vegetation communities (i.e. that may support conservation significant flora) (see section 3.7.1 and 3.7.2 above).

3.7.4 Fauna

There have been wide variety of vertebrate fauna surveys implemented across the Project area and within its surrounds. These surveys have all included a strong focus on implementing targeted survey methodologies for threatened fauna. The design and implementation of the majority of the field survey work undertaken across the project area is considered to be consistent with the survey guidelines as provided by the Commonwealth and Queensland Governments.

Collectively, the work demonstrates that the fauna of the project area (and surrounds) is well understood, and there was substantial survey effort in all seasons during the period 1998 to 2012 (see Austecology report in **Appendix C** for more details on the fauna surveys undertaken in and around the Project site).

The Power Station site is located within an extensive area of cleared pastoral land which does not support suitable habitat for any of the threatened fauna species that potential may occur in the areas surrounding the Project. Hence there will be no potential for direct impacts to conservation significant fauna as a result of construction or operation of the Power Station.

As mentioned above, the potential for indirect impacts as a result of air and noise emissions from the Power Station has been assessed. Assessment of the potential for indirect impacts as a result of air emissions has demonstrated that there will be no significant impacts to any remnant vegetation communities (i.e. that may support conservation significant fauna) (see section 3.7.1 and 3.7.2 above).

The closest mapped remnant vegetation to the Power Station and roads within the Power Station site are the distal ends of two relatively narrow linear bands of mixed polygon Least Concern RE. The closest extent of the western patch of vegetation to the stack is 375 m, and the closest extent of the eastern patch of vegetation is 475 m. The closest extent of either the access road or the haul road is 65 m to the western patch, and 86 m to the eastern patch. The environmental management plan will make provision for these areas to be clearly flagged so as to be avoided during clearing activities. During operation, these patches of vegetation could be subject to noise levels of around 70 dBA. However, both of these relatively small remnant patches, and the Power Station Site itself, are located within an extensive area of cleared pastoral land which does not support suitable habitat for any of the threatened fauna species with the potential to occur in the surrounding area.

Remnant vegetation habitats, approximately 6 km to the south-west of the centre of the Power Station have potential to support several of the threatened species that may occur in the region, although the closest record of a threatened fauna species is approximately 8.5 km from the Power Station. In terms of the potential for noise impacts, the model outputs for the "worst-case" situation show that the highest predicted noise level at approximately 6 km from the power plant (an area including potential and / or known habitat for threatened MNES) reduces to between 35 to 40 dBA and further reduces to below 30 dBA at approximately 8.5 km from the power plant. These noise levels are well below those associated with negative impacts to fauna (i.e ~60dBA - see Austecology report). Hence it is considered unlikely that there will be any significant impacts to conservation significant fauna as a result of noise from operation of the Power Station.

3.7.5 Pests and Weeds

Of the 695 plant species recorded from all sites surveyed during the field surveys for the Galilee Coal Project, 44 (6%) are exotic or weed species. Six plant species declared under the *Land Protection (Pest and Stock Route Management) Act 2002* (now regulated under the *Biosecurity Act 2014*) were recorded during the site visits, all of which are also listed as Weeds of National Significance.

Seven introduced fauna species were also recorded.

Prior to the commencement of clearing and construction work, Waratah Coal will develop and implement a detailed Weed and Pest Management Strategy that addresses the construction, rehabilitation and operation phases of the Project. The plan will include hygiene protocols to minimise the likelihood of introduction and spread of environmental, agricultural and declared weeds. These may include:

- development and implementation of feral animal control strategies including an ongoing eradication strategy and a systematic monitoring program
- implementation of sediment control mechanisms to reduce the potential for the spread of weed species into sensitive areas
- vehicle wash down procedures and facilities to avoid the potential for weed spread
- making weed assessments prior to ground disturbance and continuing to monitor for changes in weeds on a monthly basis throughout the Project
- requiring that all equipment/machinery arrives on site clean of plant and soil matter
- requiring that all equipment/machinery is clean of plant and soil matter before demobilising from one site and working on another
- developing weed identification posters to be displayed in all site offices and explained during site inductions
- conducting weed surveys immediately following the completion of construction works at any given site to determine the impact that construction has had on weeds within the area; taking the appropriate and government authority preferred corrective actions where necessary.

3.8 SOCIO-ECOMOMIC ENVIRONMENT

3.8.1 Existing Local Socio-Economic Environment

The towns of Alpha and Jericho are the closest towns to the Power Station. Alpha is likely to experience relatively more social and economic impacts as a result of the Galilee Coal Project and the Galilee Power Station by virtue of its situation on the main transport route.

The dominant industry in the Alpha area is beef cattle production.

Alpha has limited infrastructure and few services. The power supply requires local diesel support for peak lopping and bore water supply is limited. The town does not have sewerage and part of the town is located in an area that is prone to flooding. The hospital offers limited services, while the school provides an education up to Grade 10. Alpha does not have a resident doctor or a full-time ambulance service, but the community has access to an ambulance that is staffed by hospital staff and a volunteer driver. Alpha has a park, library, skate park and swimming pool. Sporting facilities are, however, limited. Other than for basic needs, the nearest commercial services, senior high school and health services are located in Barcaldine (143 km) or Emerald (169 km).

At the 2011 census Alpha contained around 350 residents with another 220 people living in the surrounding area. The population is aging and continues to decline, despite recent exploration activity; many of the younger people leave the area in search of higher education or employment.

Alpha has high workforce participation rates and low unemployment levels in comparison to Queensland but is experiencing change, in part due to mine exploration: median individual income levels exceeded those for Queensland in 2011, although household income levels are lower, due to smaller household size. The population exhibits more stability than Queensland as a whole, with 62% of residents residing in the same location five year's previously.

However, non-resident workers represented over 7% of the workforce within the former Jericho Shire in 2011. House ownership was high (43% of dwellings are fully owned) but few people were buying a house (19% of dwellings) in comparison to Queensland (30% and 35%, respectively).

3.8.2 Potential Impacts

An Economic Assessment has been undertaken by ACIL Allen on behalf of Waratah Coal. This report established that over the period to 2050, The Project is projected to increase the real economic output of the Barcaldine LGA by a cumulative total of $14.2 billion. The benefits to the Barcaldine Local Council Area are projected to be consistently beneficial for the local economy with high demand for labour and goods.

The Galilee Coal Project and Galilee Power Station will have also social and economic impacts through much of Queensland. When considering the

cumulative impacts from the development of multiple large-scale coal projects in the Galilee Basin, the most impacted community will clearly be Alpha, but from a regional perspective:

- Employees are likely to be recruited from Emerald, and towns to the west/southwest of the mine site (e.g. Barcaldine, Tambo, Blackall, Longreach, Winton and Charleville) as employment at the mine will reduce driving time to the Bowen Basin mines by around two hours, and
- Businesses in Emerald are likely to benefit most from the supply of goods and services, although some goods and services required for the port and rail are likely to be sourced from Mackay and Townsville.

It has also been recognised as part of the Galilee Coal Project EIS that, if not managed correctly, there could be considerable social impacts from the Galilee Coal Project which could be further exacerbated during the construction and operation of the Power Station. A Social Impact Management Plan will be produced that will establish strategies for managing and mitigating impacts. This will tie in with the commitments given as part of the Galilee Coal Project Social Impact Management Plan, in which five Action plans relevant to the local area were identified and include:

1. Assistance in Alpha

Waratah Coal supports a coordinated approach to the management of social impacts in Alpha, as proposed by the Coordinator General in the evaluation of the EIS for the Alpha Coal Project. It is envisaged that Galilee Basin proponents will provide annual grants to improve public infrastructure and services in Alpha, including power, water, sewerage, communications, health and emergency services, affordable housing and public education. Based on preliminary population projections for a town of approximately 1,500 residents, Waratah plans to base at least 50 mine employees (and their families) in Alpha; provide suitable housing for these employees; and provide a range of incentives for other employees, their families and contractors to live in or near Alpha. A draft community cohesion policy has been prepared which aims to build strong and productive relationships between the project, its workforce and local communities; and help workers and their families integrate within the Alpha community. Waratah Coal intends to work with Ergon to provide or connect infrastructure improve the security of power supply to the towns of Alpha and Jericho.

2. Minimising Adverse Impacts on Property Owners

The most impacted properties will be the properties within, overlapping or adjoining the Galilee Coal Project and Galilee Power Station. Waratah Coal will acquire those properties that are within, or overlap the Mining Lease. While grazing will not be possible on some of these properties, others should be able to continue grazing operations (subject to dust impact assessment) although potentially at a lower level of productivity.

3. Accommodation and Housing

The Galilee Coal Project will lead to a substantial increase in the population of Alpha. The Galilee Power Project will further contribute to this increase. While an increase in population is regarded as favourable, it will increase the demand for housing and other accommodation in Alpha. This can have negative impacts on housing affordability and the availability of temporary accommodation.

Waratah Coal aims to minimise negative impacts on housing affordability and the availability of temporary accommodation in Alpha. To do this, it will be necessary to:

- Monitor housing affordability and the availability and cost of temporary accommodation in Alpha
- Provide houses for permanent employees based in Alpha (without flooding the market or incentivising unsustainable over-development), and
- Include housing affordability and temporary accommodation needs in the development plan for Alpha and provide financial support to these through the Galilee Basin Cumulative Social Impact Assessment Consultative Group.

4. Workforce Management

Waratah Coal aims to have a well-trained, healthy and relatively stable workforce. Waratah Coal also aims to:

- Maximise employment, in order of priority, in (i) the project area, (ii) the region, (iii) the rest of Queensland, and (iv) elsewhere in Australia, and
- Ensure employees and contractors act in a manner that is conducive to a safe, peaceful and enjoyable lifestyle within the project area.

Waratah Coal will:

- Boost workforce participation by promoting female and indigenous employment
- Recruit workers from areas in Queensland that have relatively high levels of unemployment
- Promote healthy lifestyle choices among workers
- Implement a Code of Conduct to help promote positive relationships between employees, contractors and local residents (and limit adverse impacts)
- Boost training through engagement of apprentices, providing support to local schools, and establishing long-term links with local training organisations, and
- Ensure all contractors and sub-contractors incorporate strategies to help achieve Waratah's workforce objectives, and report on them as appropriate.

5. Local Industry Participation

Waratah Coal aims to maximise procurement and contracting opportunities, in order of priority, in (i) the project area, (ii) the region, (iii) the rest of Queensland, and (iv) elsewhere in Australia. This will be achieved by:

- Advertising procurement and contracting opportunities locally
- Packaging contracts appropriately
- Holding briefing sessions in the project area for local businesses and contractors
- Giving preference to locally-based businesses and contractors
- In some cases, providing assistance to local organisations, and
- Monitoring and reporting on the number and value of procurement/contracts awarded.

To ensure full, fair and reasonable opportunity for Queensland and Australian companies, Waratah Coal will prepare either an Australian Industry Participation Plan (AIPP) or Local Industry Participation Plan (LIPP). The Industry Capability Network (ICN) has placed a description of the Galilee Coal Project on its website. Further collaboration with the ICN is expected.

Contractors and sub-contractors will be required to incorporate strategies to help achieve Waratah Coal's local industry participation objectives, and report on them as appropriate.

3.9 CULTURAL HERITAGE

The subject site is Freehold land and is not subject to a Land Title Claim. There are no national or state heritage places within the site on the cultural heritage register. The subject site is within the Claim Area of the Wangan and Jagalingou people (W & J) with whom Waratah Coal have a negotiated Cultural Heritage Management Plan (CHMP). Waratah Coal is aware of their duty pursuant to the CHMP and their duty of care requirements so as to not cause harm to Aboriginal places or sites from their development. Prior to any ground disturbance the W& J will be engaged to undertake cultural heritage surveys to ensure that any cultural heritage artefacts are preserved as required under the CHMP.

4.0 STATE PLANNING INSTRUMENTS

4.1 PLANNING ACT 2016 AND PLANNING REGULATION 2017

The *Planning Act 2016* (the Act) is the overarching framework for Queensland's planning and development system. The purpose of the Act is:

'to establish an efficient, effective, transparent, integrated, coordinated, and accountable system of land use planning (planning), development assessment and related matters that facilitates the achievement of ecological sustainability'.

The *Planning Regulation 2017* (the Regulation) supports the application of the Planning Act. Schedule 8 of the Regulation outlines the relevant assessment manager for development applications. Schedule 10 of the Regulation outlines all assessment matters applying to a particular development.

Section 45 of the *Planning Act 2016* states the matters that Council must take into consideration when deciding an application for Code Assessment to which planning scheme or development control provisions apply.

A code assessment is an assessment that—
(a) must be carried out—
(i) against the assessment benchmarks in a categorising instrument for the development; and
(ii) having regard to any matters prescribed by regulation for this subparagraph; and

(b) may be carried out against, or having regard to, any other relevant matter, other than a person's personal circumstances, financial or otherwise.

Examples of another relevant matter—
- *a planning need*
- *the current relevance of the assessment benchmarks in the light of changed circumstances*
- *whether assessment benchmarks or other prescribed matters were based on material errors*

Note— See section 277 for the matters the chief executive must have regard to when the chief executive, acting as an assessment manager, carries out a code assessment or impact assessment in relation to a State heritage place.

(6) An assessment carried out against a statutory instrument, or another document applied, adopted or incorporated (with or without changes) in a statutory instrument, must be carried out against the statutory instrument or document as in effect when the application was properly made.

(7) However, if the statutory instrument or other document is amended or replaced before the assessment manager decides the application, the assessment manager may give the weight that the assessment manager considers is appropriate, in the circumstances, to the amendment or replacement.

4.2 STATE REFERRALS AND REQUIREMENTS

The Planning Regulation 2017 (PR 2017) is a categorising instrument that can:

(A) **Prescribe the assessment manager** for a development application;
(B) **Categorise development** as prohibited, assessable or accepted development or development a planning scheme cannot make assessable; specify the category of assessment for assessable development; and set out assessment benchmarks.
(C) **Prescribe referral agencies** for an application.

Each of these matters is addressed in turn below.

(A) Assessment Manager

The Assessment Manager prescribed in Schedule 8 of the Regulation is the Local Government – Barcaldine Shire Council as the proposal involves assessable development under the Local Planning Instrument.

(B) Categorising Development

(i) ***Development a local categorising instrument is prohibited from making assessable development***
This application is not for development identified in Schedule 6 of the PR 2017 as development a local categorising instrument is prohibited from making assessable development.

(ii) ***Accepted Development***
This application is not for development identified as accepted development in Schedule 7 of the PR 2017.

(iii) ***Prohibited Development***
The application does not involve prohibited development identified in Schedule 10 of the PR 2017, as demonstrated in **Table 6**.

(iv) ***Assessable Development & Assessment Benchmarks***
The application includes development identified as Assessable Development in Schedule 10, as demonstrated in **Table 6.**

(C) Referral Agencies

This application requires referral to DSDMIP for various matters (as prescribed under Schedule 10 and demonstrated in **Table 6**) as well as Ergon as an advice agency due to the location of easements for electricity purposes over the subject site.

Note: Grey shading indicates no provisions.

Table 6- Assessment against Schedule 10 of the Planning Regulation

PART	MATTER	PROHIBITED DEVELOPMENT	ASSESSABLE DEVELOPMENT & CATEGORY OF ASSESSMENT	REFERRAL AGENCY	ASSESSMENT BENCHMARKS & MATTERS FOR ASSESSMENT
1	**Airport Land**		N/A	N/A	N/A
2	**Brothels**	N/A	N/A		N/A
3	**Clearing Native Vegetation**	N/A	N/A – no vegetation clearing triggered	DSDMIP (SARA)	SDAP
4	**Contaminated Land**		N/A	N/A	N/A
5	**Environmentally Relevant Activity**	N/A	MCU for a number of triggers outlined below	DSDMIP (SARA)	SDAP

Table 6- Assessment against Schedule 10 of the Planning Regulation					
PART	**MATTER**	**PROHIBITED DEVELOPMENT**	**ASSESSABLE DEVELOPMENT & CATEGORY OF ASSESSMENT**	**REFERRAL AGENCY**	**ASSESSMENT BENCHMARKS & MATTERS FOR ASSESSMENT**
6	**Fisheries:** - Aquaculture - Declared Fish Habitat - Marine Plants - Waterway Barrier works		Operational Works for Waterway Barrier Works (Code Assessable) – N/A will be dealt with as required at detailed design stage. One low risk crossing may be assessed under the policy..	DSDMIP (SARA)	State Code 18
7	**Hazardous Chemical Facilities**		A hazardous chemical facility means the use of premises for a facility at which a prescribed hazardous chemical is present or likely to be present in a quantity that exceeds 10 per cent of the chemical's threshold quantity under the Work Health and Safety Regulation 2011, schedule 15.	DSDMIP (SARA)	State Code 21
8	**Heritage Place:** - Local Heritage Place - Queensland Heritage Place		N/A	N/A	N/A
9	**Infrastructure Related:** - Designated Premises - Electricity - Oil and Gas - State Transport Corridors and Future State Transport Corridors - State-controlled transport tunnels and future state-controlled transport tunnels		(Electricity) MCU on land subject to an easement for electricity transmission purposes (State Transport) Development stated in Schedule 20 – Not Triggered	Powerlink/ Ergon DSDMIP (SARA)	The purposes of the Electricity Act and the Electrical Safety Act SDAP
10	**Koala Habitat Area**	N/A			Planning Regulation 2017 Schedule 11
11	**Noise Sensitive Place on Noise Attenuation land**	N/A			
12	**Operational Work for Reconfiguring a Lot**		N/A		
13	**Ports:** - Brisbane Core Port Land - Within the port limits of the Port of Brisbane		N/A	N/A	N/A

Table 6- Assessment against Schedule 10 of the Planning Regulation					
PART	**MATTER**	**PROHIBITED DEVELOPMENT**	**ASSESSABLE DEVELOPMENT & CATEGORY OF ASSESSMENT**	**REFERRAL AGENCY**	**ASSESSMENT BENCHMARKS & MATTERS FOR ASSESSMENT**
	- Within the limits of another port - Strategic Port Land				
14	**Reconfiguring a Lot under the Land Title Act**		N/A	N/A	N/A
15	**SEQ Development Area**		N/A	N/A	N/A
16	**SEQ Regional Landscape and Rural Production Area and Rural Living Area:** - Community Activity - Indoor Recreation - Residential Development - Urban Activity	N/A	N/A	N/A	N/A
17	**Tidal Works or Work in a Coastal Management District**		N/A	N/A	N/A
18	**Urban Design**			N/A	N/A
19	**Water Related Development:** - Taking or interfering with water - Removing quarry material - Referrable dams - Levees		Operational Works application (Code) if the referrable dam triggers the relevant requirements	DSDMIP (SARA)	SDAP
20	**Wetland Protection Area**	N/A	N/A	N/A	N/A
21	**Wind Farms**		N/A		N/A

In summary, the application requires referral to the State for the following matters;

1. Hazardous Chemical Facility
2. Environmentally Relevant Activities (discussed below)

4.3 STATE PLANNING POLICIES

The State Planning Policy (SPP) defines the Queensland Government's policies about matters of state interest in land use planning and development and came into effect in July 2017.

The SPP includes interim development assessment requirements to ensure that state interests are appropriately considered by local government when assessing development

applications where the local government planning scheme has not yet appropriately integrated the state interests in the SPP.

The Jericho Planning Scheme has not been updated to reflect the State Interests, as such the state interests in the SPP need to be addressed. As such, the relevant components of the interim development assessment have been considered.

The SPP is supported by mapping layers that assist in determining the extent to which the SPP is applicable over the Study Area. These are illustrated in Section 1.2.6 of the report (Table) and are discussed further below;

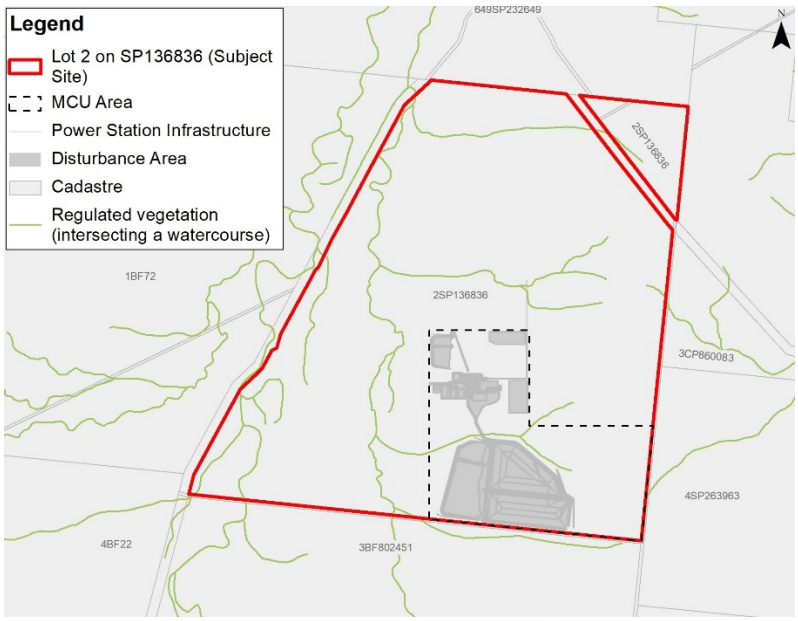
4.3.1 Planning for Environment and Heritage

Biodiversity

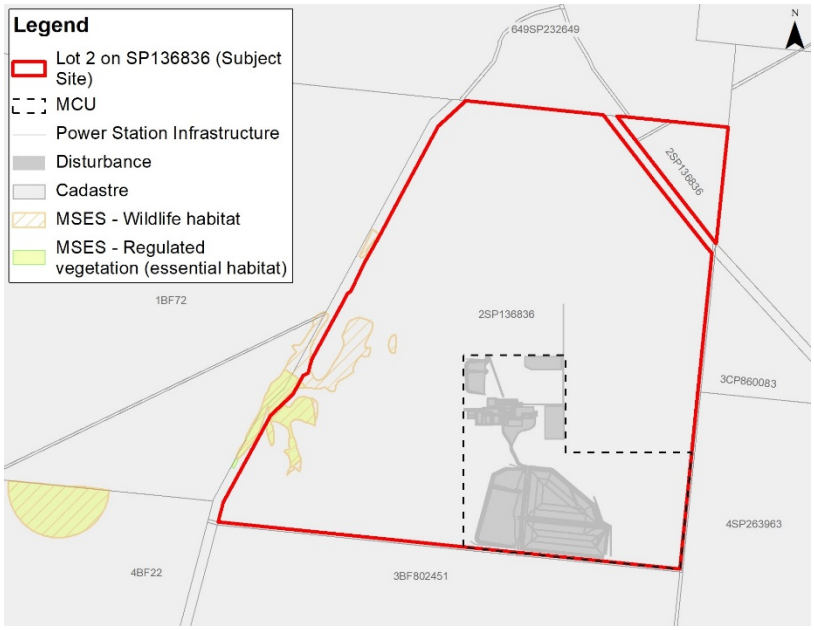
The SPP states that *All of the following state interest policies must be appropriately integrated in planning and development outcomes, where relevant.*
(*1) Development is located in areas to avoid significant impacts on matters of national environmental significance and considers the requirements of the Environment Protection and Biodiversity Conservation Act 1999.*
(2) Matters of state environmental significance are identified2 and development is located in areas that avoid adverse impacts; where adverse impacts cannot be reasonably avoided, they are minimised3 .
(3) Matters of local environmental significance are identified and development is located in areas that avoid adverse impacts; where adverse impacts cannot be reasonably avoided, they are minimised4.
(4) Ecological processes and connectivity is maintained or enhanced by avoiding fragmentation of matters of environmental significance.
(5) Viable koala populations in South East Queensland are protected by conserving and enhancing koala habitat extent and condition.

The relevant mapping over the Study Area is as follows:

- MSES - Regulated vegetation (intersecting a watercourse)



- MSES – Wildlife Habitat and Essential Habitat



Neither of these mapped areas are affected by the proposed Power Station disturbance area.

Water Quality

The SPP states that in relation to Water Quality *All of the following state interest policies must be appropriately integrated in planning and development outcomes, where relevant.*
(1) Development facilitates the protection or enhancement of environmental values and the achievement of water quality objectives for Queensland waters.
(2) Land zoned for urban purposes is located in areas that avoid or minimise the disturbance to:

(a) high risk soils
(b) high ecological value aquatic ecosystems

(c) groundwater dependent ecosystems
(d) natural drainage lines and landform features.

(3)Development is located, designed, constructed and operated to avoid or minimise adverse impacts on environmental values of receiving waters arising from:

(a) altered stormwater quality and hydrology
(b) waste water (other than contaminated stormwater and sewage)
(c) the creation or expansion of non-tidal artificial waterways
(d) the release and mobilisation of nutrients and sediments.

(4) At the construction phase, development achieves the applicable stormwater management design objectives in table A (appendix 2).

(5) At the post-construction phase, development:

(a) achieves the applicable stormwater management design objectives on-site, as identified in table B (appendix 2); or
(b) achieves an alternative locally appropriate solution off-site that achieves an equivalent or improved water quality outcome to the relevant stormwater management design objectives in table B (appendix 2).

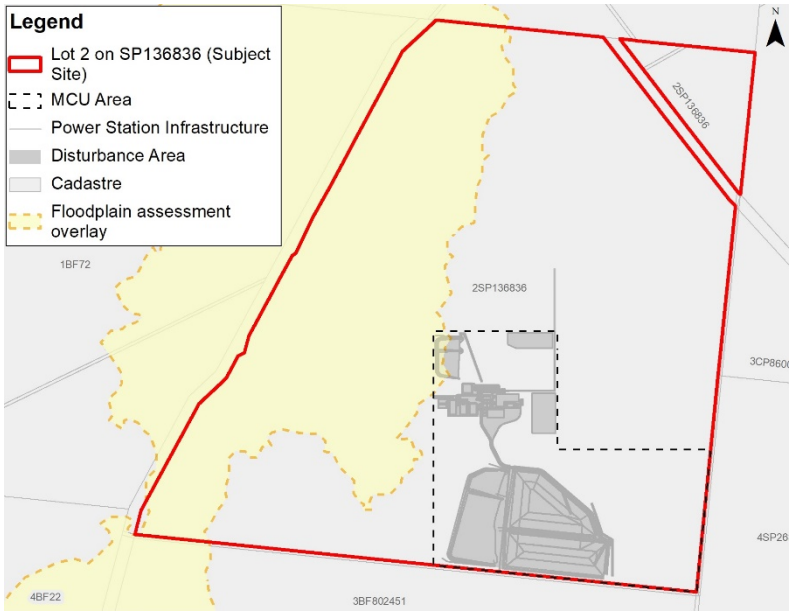
(6) Development in water resource catchments and water supply buffer areas avoids potential adverse impacts on surface waters and groundwaters to protect drinking water supply environmental values.

The potential impacts on water quality have been discussed in this report. In summary, no excess water is created by the proposed use. All water used as part of the Power Station are stored in dams with a design level to withstand a 1:1000 year ARI flood event.

4.3.2 Planning for Safety and Resilience to Hazards

Natural Hazards Risk and Resilience

Flood hazard areas – Level 1 are mapped as an SPP layer in the Study Area. The affected areas are located in the north-western corner of the MCU area. The proposed sedimentation dam has been located in this area and consequently earthworks will be undertaken to construct the dam and associated dam wall. As discussed previously in this report all Dams will be subject to a Failure Impact Assessment and as part of that assessment detailed consideration of the dam wall locations and heights will be considered to ensure there are no impacts on the surrounding areas.



Energy and water supply

The subject site is affected by Major Electricity Infrastructure. This is an existing high voltage power line that traverses the site. The application will be referred to the relevant Electricity Infrastructure Owner (Ergon). The Power Station location will not affect this existing infrastructure.

In summary, apart from a small amount of the MCU site affected by the floodplain assessment overlay, there are no matters of State Interest that will be impacted by the proposed *Public Utility*.

4.4 ENVIRONMENTAL PROTECTION ACT

The *Environmental Protection Act 1994* is primarily concerned with environmental pollution. The Act seeks to achieve its objective by setting out a program for the identification and protection of important elements of the environment (environmental values) and by creating a range of regulatory tools for controlling the activities of individuals or companies.

Schedule 2 of the *Environment Protection Regulation 2008* outlines environmentally relevant activities (ERAs). These are activities that require specific licences and approvals. The following Table summarises the ERA's as relevant to the proposed use.

ERAs	ERA Threshold	Galilee Power Station ERA threshold or increase	ERA required
ERA 8 Chemical Storage	1: ≥50t Class 1, 2 chemicals 2: ≥50t Class 6, Div 1 chemicals in containers capable of 900kg 3: >500m³ C1 or C2 combustible liquids or DG Class 3	• Sulfuric acid (Class 8) <50t • Fuel Oil (C1 combustible) ~250m³ • Anti-scalant (Class 8) ~10t • Caustic Soda (Class 8) ~40t • Hydrazine (Class 6.1) ~20t	No

ERAs	ERA Threshold	Galilee Power Station ERA threshold or increase	ERA required
	4: >200t solid or liquid gases 5: 200m^3 liquids	• Ammonia (Class 8) ~20t	
ERA 14 Electricity generation	-	1(b): >150MW	Yes **Concurrence**
ERA 15 Fuel Burning	> 500kg of fuel in an hour	Does not apply if another ERA applies	No
ERA 16 Extractive and Screening Activities	If for screening of Materials on the site from which it has been extracted in the course of carrying out a Resource Activity	Coal will be screened (washed, crushed)	Yes but not a Concurrence
ERA 31 Mineral Processing	2(b): >100,000L/y	Nil (coal processing will be undertaken in the adjacent Galilee Coal Mine as per the draft EA for that project)	No
ERA 33 Crushing, Milling, Grinding or Screening	More than 5000t	Does not apply if ERA 16 applies	Yes Concurrence
ERA 50 Bulk Material Handling	Stockpiling more than 500t	Two stockpiles greater than 180,000 t	Yes Concurrence
ERA 57 Regulated Waste Transport	No threshold	Transport of Fly Ash within the site	Yes Concurrence
ERA 60 Waste disposal	1(a): <50,000t/y	Fly Ash	Yes Concurrence
ERA 63 Sewage Treatment	2(b)(i): >100 - 1500EP	+90 operational personnel = +45EP	Yes Concurrence
ERA 64 Water Treatment	2(a): Desalinating 0.5 - 5ML/day	Exempt if waste is disposed of in an ERA60 Facility	No

Each of the relevant Environmentally Relevant Activities have been described and discussed in Section 1 of this report. Section 4.4.1 addresses the relevant State Planning provisions.

4.4.1 State Development Assessment Provisions

The State Development Assessment Provisions (SDAP) set out the matters of interest to the State for development assessment. The document contains the items that the Chief Executive will have regard to when assessing a development application as either the Assessment manager or as a Referral Agency. It includes 24 Locational and Use based State Codes.

State Code 18: Constructing or raising waterway barrier works in fish Habitats

This policy has not been addressed as part of this Planning Assessment report as there is only 1 green mapped waterway within the site which will be subject to a crossing. The crossing will be designed to be compliant with the Waterway Barrier Works Policy.

State Code 20: Referrable Dams

This policy has not been addressed as the proposed Dams on the site are all less than 10m in height. They are considered to be Regulated Structures as they are related to an ERA and may be subject to separate consideration and assessment. This is addressed in detail in Section 1.4.11.

State Code 21: Hazardous chemical facilities

This application for Material Change of Use is considered a Hazardous Chemical Facility and as such a Preliminary HazardAssessment has been prepared and is attached as **Appendix E**. ERA 7 and ERA 8 do not apply given the types and quantity of chemicals stored on site.

State Code 24: Environmentally relevant activities

The only relevant SDAP module relevant to this application is State Code 22 regarding Environmentally Relevant Activities. This is addressed below;

Performance outcomes	Acceptable outcomes	Response
All ERAs		
PO1 Development is suitably located and designed to avoid or mitigate environmental harm to the acoustic environment.	**AO1.1** Development meets the acoustic quality objectives for sensitive receptors identified in the Environmental Protection (Noise) Policy 2008.	*A noise report has been prepared which addresses the potential impacts on sensitive receptors*
PO2 Development is suitably located and designed to avoid or mitigate environmental harm to the air environment.	**AO2.1** Development meets the air quality objectives of the Environmental Protection (Air) Policy 2008.	*An air quality report has been prepared which addresses the potential impacts on air quality from the proposed development*
PO3 Development, other than intensive animal industry for poultry farming, is suitably located and designed to avoid or mitigate environmental harm on adjacent sensitive land uses caused by odour.	No acceptable outcome is prescribed.	*The Power Station has been located to minimise environmental impacts. No clearing is required and there will be no impact on existing surrounding waterways. There are no sensitive land uses in proximity to the site.*
PO4 Development is suitably located and designed to avoid or mitigate environmental harm to the receiving waters environment.	**AO4.1** Development meets the management intent, water quality guidelines and objectives of the Environmental Protection (Water) Policy 2009.	*A full assessment of the impact on the surrounding receiving waters has been included in the attached environmental assessment report*
PO5 Development is designed to include elements which: 1. prevent or minimise the production of hazardous contaminants and waste as by-products; or 2. contain and treat hazardous contaminants on-site rather than releasing them into the environment; and 3. provide secondary containment to prevent the accidental release of	No acceptable outcome is prescribed.	*A full assessment of the waste generated by the proposed Power Station and the measures to mitigate the impacts are contained in the assessment report.*

Performance outcomes	Acceptable outcomes	Response
hazardous contaminants to the environment from spillage or leaks.		
PO6 Environmentally hazardous materials located on site are stored to avoid or minimise their release into the environment due to inundation during flood events.	No acceptable outcome is prescribed.	*A detailed Assessment of Environmentally Hazardous Material quantities and potential impacts has been included within this report. All materials will be stored in a secure area which is not subject to flooding.*
All development – matters of environmental significance		
PO7 Development: 1. avoids impacts on matters of state environmental significance; or 2. minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and 3. provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance. Statutory note: (3) only applies to development on Brisbane core port land within the area identified as E1 Conservation/Buffer, E2 Open Space or Buffer/Investigation in the Brisbane Port LUP precinct plan. For the Brisbane Port LUP, see www.portbris.com.au. Note: Guidance for determining if the development will have a significant residual impact on a matter of state environmental significance is provided in the Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, 2014. Where the significant residual impact is considered an acceptable impact on the matter of state environmental significance and an offset is considered appropriate, the offset should be delivered in accordance with the *Environmental Offsets Act 2014*.	No acceptable outcome is prescribed.	*There are no matters of state environmental significance impacts by the location of the proposed power station.*
Category C areas and category R areas of vegetation		
PO8 Development: 1. avoids impacts on category C areas of vegetation and	No acceptable outcome is prescribed.	*There is Category R vegetation on the site. This vegetation will not be affected by the proposed power station.*

Performance outcomes	Acceptable outcomes	Response
category R areas of vegetation; or 2. minimises and mitigates impacts on category C areas and category R areas of vegetation after demonstrating avoidance is not reasonably possible.		

In summary, the proposed use is consistent with the relevant State Development Assessment Provisions to the extent relevant.

4.5 CENTRAL WEST REGIONAL PLAN

The Central West Regional Plan was adopted in September 2009. The vision for the plan is;

"The quality of our region's relaxed, balanced lifestyle is widely known and sets us apart from other regions in Queensland and Australia.
As custodians of Australian history, we take seriously our stewardship of history, culture, natural resources and the environment.
Ours is a region that provides the opportunity for strong, diverse and creative industries to develop, driving the economic development of our communities. People choose to live in and visit the Central West due to our liveable, affordable, safe, vibrant, prosperous and cohesive communities."

The region's physical and social character and natural beauty can be preserved and enhanced by:

- *protecting the good condition of the region's natural resources and environment, through responsible stewardship*
- *protecting and maintaining the community's character, such as the diverse tapestry of liveable communities, the scenic, walkable centres, and the variety of community activities*
- *honouring the region's rich heritage, by protecting its historic buildings, landmarks and artefacts*
- *preserving the region's distinctive character and identity.*

Keys to improving quality of life within the communities are:

- *keeping communities safe, healthy, accessible and inclusive*
- *providing a range of employment options, quality infrastructure and equitable services, including health and education*
- *recognising the importance of youth and their potential to strengthen the region*
- *encouraging recognition of a vibrant arts and cultural life, museums, libraries, arts activities and events, as a source of pride and shared experience for residents and visitors*
- *retaining the region's tradition of engaging the community through volunteering with active participation in a variety of arts, cultural, public-safety, faith-based and other community organisations.*
- *celebrating and encouraging diversity— Central West is a welcoming region that invites newcomers of all cultures and backgrounds to participate in the civic life and economic prosperity of the region.*

The proposed development responds to the vision of the Regional Plan through;

- The provision of employment opportunities;

- Providing quality infrastructure which will maintain or improve the quality of life for residents of the Central West through the provision of a reliable power source;
- Assessing and mitigating potential environmental impacts from the proposed use.

4.6 COMMONWEALTH GOVERNMENT APPROVALS

Commonwealth Approvals likely to be applicable to the Power Station are included in Table 9 below.

Legislation	Responsible Agency/Authority	Approval trigger	Specific requirements/permit
Australian Jobs Act 2013	Department of Industry, Innovation and Science	The Australian Jobs Act 2013 requires that Major Projects (>$500M) complete an Australian Industry Participation Plan, which outlines how the proponent will provide full, fair and reasonable opportunity to Australian Industry to supply goods and services. The proponent has commenced the process towards development of the plan as part of the larger Galilee Coal Project and will amend the plan to include the Power Station elements.	Australian Industry Participation Plan
Customs Act 1901	Department of Immigration and Border Protection	All goods intended for import into Australian whether as cargo by sea or air or international mail must have clearance from the Department of Immigration and Border Protection under the *Customs Act 1901*. There are some goods that are restricted or prohibited imports. The proponent has not yet determined who the manufacturer of the plant and equipment will be or which licences or permits for imported goods may be required. The proponent is aware of the requirements of this Act and will ensure that any movement into the country of restricted imports will be in accordance with the requirements of this Act.	If required, permit or licence for imported goods
Environment Protection and Biodiversity Conservation Act 1999	Department of the Environment and Energy	A referral to the Commonwealth is currently being prepared.	
Migration Act 1958	Department of Immigration and Border Protection	The Temporary Skill Shortage (TSS) visa (subclass 482) (which replaces the Temporary Work [skilled] subclass 457 visa) is designed to enable employers to address labour shortages by bringing in genuinely skilled workers where they cannot find an appropriately skilled Australian. The subclass 482 visa allows businesses to employ overseas workers for up to 4 years in skilled occupations only. The proponent has not yet determined if foreign workers are required. The proponent is aware of the requirements of this Act and will ensure any utilisation of foreign workers, in the	If required, subclass 482 visa

Legislation	Responsible Agency/Authority	Approval trigger	Specific requirements/permit
		event that they are required, would be in accordance with the requirements of this Act.	
National Greenhouse and Energy Reporting Act 2007	Clean Energy Regulator	The *National Greenhouse and Energy Reporting Act 2007* (NGER Act) makes registration and reporting mandatory for corporations whose energy production, energy use or greenhouse gas emissions meet specified thresholds. There are two types of thresholds which determine which corporations are required to participate in the National Greenhouse and Energy Reporting Scheme (NGERS). The first threshold applies to specific facilities and the second to corporate groups. Currently, the NGERS applies to facilities that emit 25 kilotonnes (kt) or more of carbon dioxide equivalent (CO_2-e) or produce or consume 100 tetrajoules (TJ) or more of energy or corporations that emit 50 kt or more of CO_2-e or produce or consume 200 TJ or more of energy.	Registration and reporting under the Act will be required.

5.0 TOWN PLAN AND LOCAL PLANNING POLICIES

5.1 JERICHO STRATEGIC PLAN

The subject site is located within the Barcaldine Regional Council Local Government Area. Two Planning Schemes are applicable within this Local Government Area. The subject site is located in an area covered by the Jericho Planning Scheme which was adopted in June 2006. It has not been amended for the *Planning Act 2016*.

The use is defined as a *Public Utility* under the Jericho Planning Scheme.

The desired environmental outcomes for Jericho Shire are as follows:

3.1 The Environment

In Jericho Shire, ecological systems, the natural environment (including the landscape and natural features such as the Great Dividing Range, Cudmore National Park and Resources Reserve) and items and places of cultural and heritage significance are protected and enhanced by development. – Development is managed to minimise any adverse impacts on air and water quality, to prevent land degradation, loss of habitat and biodiversity and to protect riparian areas. – Protected areas (including Cudmore National Park and Resources Reserve) and areas, local items and places of cultural significance (including areas along water courses) are identified to ensure their environmental, landscape values and historic significance are protected and enhanced through compatible development.

Response: The proposed development has been located in an area which does not require any clearing of natural vegetation or interference with existing watercourses. The design and operation of the Power Station will minimise impacts on the surrounding areas through the incorporation of best practice environmental standards.

3.2 Economic Development

The economy of Jericho Shire is enhanced and diversified through the sustainable use of natural resources (including land and mineral resources) and through a wide range of other economic activities that respect the town hierarchy of Alpha, the main urban centre and Jericho, the small town.

– The Planning Scheme reinforces the role of Alpha as the principal place for administrative services, business, industry and commerce within the Shire.

– The local service role of the small town of Jericho is protected and enhanced.

– Productive rural land, rural industries and natural features (including mineral and extractive resources and tourist resources) are protected to reflect and enhance their continued economic potential and viability.

– The Shire's industrial areas in Alpha are consolidated and protected to ensure their role as the key areas for industrial activity is reinforced.

Response: The proposed development will enhance the economy of the Barcaldine Shire through the increase in goods and services required directly and indirectly from the development of the power station. The Power Station will also secure stable, affordable power to the new mines and the existing townships in the region.

3.3 Community and Services

Development in Jericho Shire is consistent with community expectations and needs, and contributes to community wellbeing through the enhancement of core community elements (including the built environment, services, facilities and infrastructure).

– The settlement pattern is logical and sequenced and the built environment contributes to the overall rural amenity and character of Jericho Shire.

– People are connected to public spaces (including recreational areas) and community services through an appropriate land use structure and the provision of infrastructure, particularly within the urban centre of Alpha, and small town of Jericho.

– Development contributes to the health and safety of people and provides a diverse range of housing types, services and facilities.

– Infrastructure (including water, sewerage and roads) reflects community expectations and needs, meets engineering and environmental standards and is provided in an orderly and logical sequence to ensure cost effectiveness.

Response: The proposed Power Station will increase demand for housing in the surrounding townships which will assist in the provision of better community infrastructure including improvement to the airport, upgrading of educational facilities and local medical facilities.

5.2 INTENT OF AREA

(4) Within the Rural "Zone", "development":

(a) maintains the environment, including soil, air and water, compatible with healthy natural systems and ensures public health and safety;

(b) protects Good Quality Agricultural Land (GQAL) from fragmentation, alienation or encroachment of incompatible land "uses" in accordance with State Planning Policy 1/92 – Development and Conservation of Agricultural Land;

(c) is located, designed and operated in a manner that protects and enhances the predominant rural scale, intensity, form and character;

(d) maintains the rural amenity;

(e) does not prejudice or impact adversely on other "uses" including those within other "Zones";

(f) does not prejudice extractive or mining resources;

(g) has an appropriately designed access to the road network, and traffic generated by the development does not impact adversely on the local road network;

(h) protects areas and sites of conservation importance, including cultural and high landscape values;

(i) protects and maintains the integrity of the Lake Eyre Basin;

(j) is undertaken in an orderly and logical sequence to achieve an efficient provision of infrastructure;

(k) is located and designed in ways that minimise the need for flood, bushfire and landslide mitigation, and to protect people and premises from such natural events;

(l) has water supply, stormwater disposal, sustainable effluent and waste disposal and power, to appropriate standards, adequate for the "use"; and

(m) does not impact adversely on infrastructure.

(5) Within the Rural "Zone", the Rural "Zone" Code allows for:

(a) tourist related uses ("bed and breakfast premises" and "visitor accommodation") and "home businesses" where they are of a small scale and are compatible with surrounding "uses"; and

(b) limited industrial "uses", where it can be demonstrated those "uses" are associated with rural production and can not reasonably be established in the Industrial "Zone".

5.3 RURAL CODE

Performance outcomes	Acceptable outcomes	Response
Material Change of Use		
PC1 Non-"Rural activities" - Locational Criteria Non-"Rural activities" are located in the Rural "Zone" only where those activities: (a) do not impact adversely on the amenity of the Rural "Zone"; (b) demonstrate a nexus with rural activities or natural or cultural resources; (c) do not prejudice the consolidation of like non- "Rural activities" in other more appropriate "Zones"; (d) do not prejudice the productive capacity of existing or future rural land; and (e) protect the landscape values and scenic qualities of the rural "Zone".	No acceptable Solution is proposed	**R01** Not applicable
PC2 Non-"Rural activities" - Scale Non-"Rural activities" are of an appropriate scale to protect the amenity of the Rural "Zone" and do not prejudice the operation and viability of other "Uses" or activities in the Rural "Zone" or other "Zones"	AS2 The "Total use area" is less than 150m2 on a lot.	**R02** Not applicable
PC3 Non-"Rural activities" - Operating Hours Non-"Rural activities" are operated so as to ensure that the activities and the operation of equipment occur at appropriate times to protect the amenity of the Rural "Zone".	AS3 Non-"Rural activities" are operated only between the hours of 7:00am and 6:00pm.	**R3** Not applicable
PC4 Non-"Rural activities" - Delivery of Goods The loading and unloading of goods in connection with non- "Rural activities" occurs at appropriate times to protect the amenity of the Rural "Zone"	AS4.1 Loading and unloading occurs only between the hours of: (a) 7:00am and 6:00pm, Monday to Friday and (b) 7:00am and 12:00 (noon) on Saturdays. AS4.2 No loading and unloading occurs on Sundays and Public Holidays.	**R4** Noted

PC5 "Residential Activities" - Density Land within the Rural "Zone" is maintained for rural activities.	For "Detached houses": AS5.1 No more than 1 (one) "Detached house" per lot. For "Caretaker's residences": AS5.2 No more than 1 (one) "Caretaker's residence" per lot. For all other "Residential activities": No acceptable solution is prescribed.	**R5** Not applicable
PC6 Height The height of "Buildings" and "Structures" does not impact adversely on the amenity of the Rural "Zone" and is consistent with the predominant rural form.	AS6 "Buildings" and "Structures" other than those within 100 metres of the boundary of an "Airport" are less than 8.5 metres in height and are not more than 2 (two) storeys at any point above natural ground level. (Except where establishing in an existing "Building" and no "Building works" are being undertaken for that existing "Building" and excluding windmills, silos and other rural operational equipment).	**R6** The use is not within 100m of the airport.
PC7 Setbacks and Boundary Clearances "Buildings" and "Structures" are located to ensure the rural amenity is protected and enhanced.	AS7.1 "Buildings" and "Structures" have a setback of not less than 20 metres from any road frontage other than a State Controlled Road as identified on Land Characteristics Map – Features Map. AS7.2 "Buildings" and "Structures" have side and rear boundary clearances of not less than 15 metres from property boundaries. (Except where establishing in an existing "Building" and no "Building works" are being undertaken for that existing "Building").	**Not applicable**
PC8 Transport Movements Transport movements associated with the use protect the amenity of the locality.	For "Rural activities" and "Industrial activities": AS8 Transport movements do not occur through residential areas.	**R8** There will be no traffic through residential areas

	For all other "Uses": No acceptable solution is prescribed.	
PC9 "Building" and "Structure" Design "Buildings" and "Structures" are designed such that the amenity of the Rural "Zone" is protected and maintained.	No acceptable solution is prescribed	**R9** The buildings and structures are not located in proximity to any major roads, urban areas or nearby homesteads. There will be no significant impact on Rural Amenity.
PC10 Ridgelines and Escarpments Ridgelines and escarpments are maintained in a natural state to protect rural character and landscape values.	AS10 All "Buildings" and "Structures" maintain a minimum 50 metre separation distance to a ridgeline or escarpment. (Except where establishing in an existing "Building" and no "Building works" are being undertaken and excluding windmills and other rural operational equipment.)	**R10** The site is not located on an escarpment or ridgeline.
PC11 Landscaping and External Activity Areas Landscaping and external activity areas are provided on - site to: (a) contribute to a pleasant and functional rural built form; (b) provide positive sun and breeze control; (c) make provision for recreation areas; and (d) contribute to the Rural "Zone's" positive visual qualities.	No acceptable solution is prescribed.	**R11** The proposed use is not located in proximity to any major roads or urban areas so will not significantly impact on the visual quality of the area.
PC12 Lighting The design of lighting does not prejudice the amenity of the Rural "Zone" through poorly directed lighting, lighting overspill or lighting glare.	AS12 Direct lighting or lighting does not exceed 8.0 lux at 1.5 metres beyond the boundary of the site	**R12** This can be a condition of approval.
PC13 Separation of Incompatible Land Uses Separation distances are provided to ensure: (a) the future viability of surrounding "Uses"; (b) infrastructure items are protected from incompatible "Development"; (c) an appropriate standard of amenity and public safety; and (d) conflict arising from incompatible "Uses" is minimised.	For "Sensitive land uses" and "rural activities" other than "Intensive animal industries": AS13.1 Minimum separation between "Sensitive land uses" and "rural activities" comply with the "Buffer Area Design Criteria" as contained in Table 2 of Section 3.47 of SPP1/92 – Planning Guideline – "Separating Agricultural and Residential Land Uses". For	**Not applicable**

	"Intensive animal industries": AS13.2 Minimum separation distances to "Sensitive land uses" are as stated in Schedule 2, Division 1: Separation Distances – Intensive Animal Industries, Section 1.1. For "Sensitive land uses": AS13.3 Minimum separation distances to "Intensive animal industries" are as stated in Schedule 2, Division 1: Separation Distances – Intensive Animal Industries, Section 1.2. For "Grazing": AS13.4 Pens and yards maintain a minimum separation distance of 300 metres to "sensitive land uses" not associated with the "grazing". For all "Uses" other than "Extractive Industries": AS13.5 "Buildings", "Structures" and "Outdoor Activity Areas" maintain a minimum separation distance to "Extractive Industries" as stated in Schedule 2, Division 2: Separation Distances – Extractive Industries, Section 2.1. For all "Uses": AS13.6 "Buildings", "Structures" and "Outdoor Activity Areas" maintain a minimum separation distance to petroleum and gas pipelines (as identified on Land Characteristics Map – Features Map) and refuse tips (as identified in Schedule 2, Division 5: Refuse Tips, Section 5.1) as stated in Schedule 2, Division 4: Separation Distances – Infrastructure Items, Section 4.1.	

PC14 Water Supply All "Premises" have an adequate volume and supply of water for the "Use", which is also adequate for fire fighting purposes.	AS14.1 "Premises" are connected to Council's reticulated water supply system. or AS14.2 "Premises" are connected to an approved water allocation as provided by the relevant agency. or For "Residential Activities": AS14.3 "Premises" are connected to a rain water tank with a minimum capacity of: 22 000 litres where not in a reticulated water supply area; 11 000 litres where in a reticulated water supply area. For all "Uses" other than "Residential Activities": No acceptable solution is prescribed. For all "Premises" in Medium and High bushfire hazard areas as identified on Land Characteristics Map – Bushfire Hazard Areas: AS14.4 On-site water storage of not less than 5000 litres is provided by way of dam, swimming pool or tank fitted with fire brigade tank fittings. or AS14.5 The reticulated water supply has flow and pressure characteristics of 10 litres a second at 200 kPa	**R14** A water supply will be available on site for fire fighting purposes.
PC15 Effluent Disposal All "Premises" provide for the treatment and disposal of effluent and other waste water to ensure the protection of public health and environmental values.	AS15 "Premises" have an on-site effluent disposal system in accordance with Schedule 1, Division 4: Standards for Sewerage, Section 4.2.	**R15** An on-site effluent disposal system will be provided. Given the size of the Treatment Plant, an ERA approval will be required.
PC16 Stormwater Stormwater is collected and discharged so as to: (a) protect the stability of buildings or the use of adjacent land; and (b) protect and maintain environmental values	AS16 Stormwater is collected and discharged in accordance with Schedule 1, Division 5: Standards for Stormwater Drainage, Section 5.1.	**R16** Stormwater Management has been addressed within this report.

PC17 Electricity "Premises" are provided with an adequate supply of electricity for the "Use".	AS17 All "Premises" have a supply of electricity	**R17** Electricity supply for both the construction and operational phases has been addressed in this report.
PC18 Vehicle Access Vehicle access is provided to ensure the safe and functional operation for motorists and pedestrians	For "Agriculture", "Bed and breakfast premises", "Caretaker's residence" , a "Material Change of Use" from one to another of: "Commercial premises", "Professional office" or "Shop" and where not involving "Building work", "Detached house", "Grazing", "Home business" and "Visitor accommodation": AS18.1 All "Premises" must have vehicle access to a formed road. Access is to be designed and constructed in accordance with Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring Areas and Access, Section 2.3(2). For all other "Uses": AS18.2 All "Premises" must have vehicle access to a formed road. Access to be designed and constructed in accordance with Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring Areas and Access, Section 2.3(1).	**R18** A formal sealed carpark will be provided at the site for carparking. Other maneuvering and operational areas will have a compacted gravel base for all weather access.
PC19 Vehicle Parking and Service Vehicle Provision Vehicle parking and service vehicle provision is adequate for the "Use" and ensures safe and functional operation for motorists and pedestrians.	AS19.1 All "Uses" provide vehicle parking in accordance with Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring Areas and Access, Section 2.2(1)(a) AS19.2 Car parking, service vehicle parking and manoeuvring areas are designed and constructed in accordance with Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring	**R19** Vehicle Parking will be provided on site.

	Areas and Access, Section 2.2(1)(b)	
PC20 Roads, Firebreaks and Fire Maintenance Trails Adequate all-weather road access is provided between the "Premises" and the existing road network. In high and medium bushfire hazard areas, adequate road access is provided for fire fighting/other emergency vehicles and for safe evacuation.	AS20.1 Roads are designed and constructed in accordance with Schedule 1, Division 2: Standards for Roads, Carparking, Manoeuvring Areas and Access, Section 2.1(1) For "Uses" in high or medium bushfire hazard areas as identified on the Land Characteristics Map – Bushfire Hazard Areas: AS20.2 Roads, firebreaks and fire maintenance trails are designed and constructed in accordance with Schedule 1, Division 6: Standards for Roads in Bushfire Hazard Areas, Firebreaks and Fire Maintenance Trails, Sections 6.1, 6.2	**R20** The site is contained within an area with a low bushfire risk An all weather access is available from the site Access roads will surround the perimeter of the site and will be maintained for security and bushfire purposes
PC21 "Electricity transmission line easement" - Vegetation Transmission lines within an "Electricity transmission line easement" are protected from vegetation.	AS21.1 Planted vegetation within an "Electricity transmission line easement" shall have a mature height not exceeding 2.5 metres as shown in Schedule 2, Division 3: Powerline / Electricity Easements, Section 3.2 Diagram 3. AS21.2 No part of planted vegetation, at its mature size, is located closer than 2.5 metres to an electricity transmission line as shown in Schedule 2, Division 3: Powerline / Electricity Easements, Section 3.2 Diagram 3.	**R21** There will be no planted vegetation within the transmission line easement.
PC22 "Electricity transmission line easement" - Vegetated Buffers Vegetated buffers adjoining an "Electricity transmission line easement" are maintained to provide: (a) a visual buffer to the easement; and (b) a separation distance from the easement.	AS22 Existing vegetation, comprising trees and/or shrubs, shall be retained within 20 metres of an "Electricity transmission line easement" as shown in Schedule 2, Division 3: Powerline / Electricity Easements, Section 3.2 Diagram 4	**R22** Noted. There will be no tree clearing required outside of the Power Station Infrastructure Area footprint as illustrated on the attached plans.

PC23 "Electricity transmission line easement" - Separation Distance "Habitable buildings" and "Child oriented uses" are located to ensure community safety.	AS23 "Habitable buildings" and "Child oriented uses" maintain a minimum separation distance from the most proximate boundary of an "Electricity transmission line easement" in accordance with Schedule 2, Division 3: Powerline / Electricity Easements, Section 3.1 (1) and Section 3.1 Diagram 1.	**Not applicable**
PC24 "Watercourses" and "Lakes" "Development" ensures the maintenance of riparian areas and water quality including protection from off-site transfer of sediment.	AS24 A minimum 50 metre wide buffer area is provided extending out from the high bank of any "Watercourse" or "Lake". Buffer areas include a cover of vegetation, including grasses.	There are no mapped Watercourses under the Jericho Planning Scheme within the Power Station Disturbance Area. There are a number of drainage lines which have been avoided apart from one road crossing.
PC25 Vegetation Retention "Development" retains vegetation for the: (a) protection of scenic quality; (b) protection of general habitat; (c) protection of soil quality; and (d) establishment of open space corridors and networks.	AS25 Vegetation comprising 20% of each regional ecosystem type is retained within each lot with retained vegetation made up of woody remnant, regrowth or replanted natural species, excluding deep-rooted crops and clear fell plantation forestry. The shade lines are a minimum of 10 metres in width; clumps have an area greater than 2 hectares.	**R25** All vegetation outside of the Power Station Infrastructure Footprint will be retained.
PC26 Cultural Heritage "Development" ensures the protection and maintenance of places and items of cultural heritage.	AS26.1 A minimum separation distance of 50 metres is provided to the "Bed and banks" of "Watercourses" and "Lakes". AS26.2 A minimum separation distance of 50 metres is provided to cemeteries and burial sites as identified in Schedule 2, Division 6: Places and Items of Cultural Heritage, Section 6.1.	**R26** There are no watercourses in proximity to the proposed Power Station location.
PC27 Air Emissions Air emissions from "Premises" do not cause environmental harm or nuisance to adjoining properties or "Sensitive land uses".	No acceptable solution is prescribed	**R27** A full Air Quality Impact Assessment has been included with the development application

PC28 Noise Emissions Noise emissions from "Premises" do not cause environmental harm or nuisance to adjoining properties or "Sensitive land uses".2	No acceptable solution is prescribed.	**R28** A full Noise Impact Assessment has been included with the development application
PC29 Water Quality The standard of effluent and / or stormwater runoff from "Premises" ensures the quality of surface and underground water is suitable for: (a) the biological integrity of aquatic ecosystems; (b) recreational use; (c) supply as drinking water after minimal treatment; (d) agricultural use; or (e) industrial use.	No acceptable solution is prescribed.	**R29** A detailed stormwater management plan will be prepared
PC30 Excavation or Filling Excavating or filling of land: (a) ensures safety and amenity for the users of the "Premises" and land in close proximity; (b) minimises soil erosion; and (c) limits detrimental impacts on water quality.	AS30.1 Batters have a maximum slope of 25%, are terraced at every rise of 1.5 metres and each terrace has a minimum depth of 750mm. AS30.2 Excavation or filling within 1.5 metres of any site boundary is battered or retained by a wall that does not exceed 1 metre in height. AS30.3 Excavation or filling is undertaken in accordance with Schedule 1, Division 1: Standards for Construction Activities, Section 1.1	**R30** The subject site is relatively flat and consequently batters and retaining within the site will be minimal. All filling and excavation will be in accordance with Schedule 1, Division 1: Standards for Construction Activities, Section 1.1
PC31 Construction Activities Erosion control measures and silt collection measures ensure that environmental values are protected during construction activities.	AS31 During construction soil erosion and sediment is controlled in accordance with standards contained in Schedule 1, Division 1: Standards for Construction Activities, Section 1.1	**R31** A full sediment and erosion plan will be developed as part of a construction and environmental management plan.
PC32 "Development" in the vicinity of "Airports" "Development" in the vicinity of "Airports": (a) protects the operation of the "Airport"; (b) is designed and located to achieve a suitable standard of amenity for the proposed activity; and	AS32 "Buildings" and "Structures" within 100 metres of the boundary of an "airport" are less than 7.5 metres in height at any point above natural ground level. (Except where establishing in an existing "Building" and no "Building works" are being	**R32** Not applicable

(c) does not restrict the future operational requirements of the "Airport".	undertaken for that existing "Building".)	
PC33 Good Quality Agricultural Land Areas Good Quality Agricultural Land areas as identified on the Land Characteristics Map – Good Quality Agricultural Land are conserved and managed for the longer term and protected from development that may lead to its alienation or diminished productivity.	No acceptable solution is prescribed.	**R33** The subject site is not mapped GQAL
PC34 Flooding "Premises" are designed and located so as: (a) not to be adversely impacted upon by flooding; (b) to protect life and property; and (c) not to have an undesirable impact on the extent or magnitude of flooding.	No acceptable solution is prescribed.	**R34** The Power Station Infrastructure Footprint is located outside of the mapped flood area.
PC35 Protected Areas "Development" is undertaken to ensure areas of significant biodiversity and habitat value and high scenic quality are protected.	AS35 A minimum separation distance of 100 metres is provided to Protected Areas as identified on Land Characteristics Map – Features Map and as identified in Schedule 2, Division 7: Artesian Springs, Section 7.1.	**R35** The Power Station is not located within 100m of any protected areas.
PC36 Sloping Land "Development" is undertaken to ensure: (a) vulnerability to landslip, erosion and land degradation is minimised; and (b) safety of persons and property is not compromised.	AS36 "Development" is not undertaken on slopes greater than 15%.	**R36** There is no development on slopes greater than 15%.
PC37 Bushfire Hazard "Development" is located to maintain the safety of people and property from Bushfire Hazard.	AS37 "Development" is undertaken in Low Bushfire Hazard Areas as identified on Land Characteristics Map – Bushfire Hazard Areas.	**R37** The Power Station is located in a low bushfire hazard area.
PC38 High and Medium Bushfire Hazard Areas "Development" in High or Medium Bushfire Hazard Areas, as identified on Land Characteristics Map – Bushfire Hazard Areas, maintains the safety of people and property by mitigating the risk through: (a) the siting of buildings, ensuring setbacks from hazardous vegetation are maximised and elements least susceptible to fire are sited closest to the bushfire hazard; and	For "Development" in areas of High or Medium Bushfire Hazard as identified on Land Characteristics Map – Bushfire Hazard Areas, and on lots greater than 2500m2 : AS38.1 "Buildings" and "Structures": (a) are sited within the lowest bushfire hazard area; (b) achieve minimum	**R38** Not applicable

(b) the provision of firebreaks to ensure adequate setbacks between "Buildings", "Structures" and "Hazardous vegetation"	setback distances from hazardous vegetation of 1.5 times the predominant mature canopy tree height or 10 metres, which ever is the greater; and (c) achieve a setback distance from any retained vegetation strips or small areas of vegetation of 10 metres. For "Development" in areas of High or Medium Bushfire Hazard as identified on Land Characteristics Map – Bushfire Hazard Areas, and on lots less than or equal to 2500m2 : No acceptable solution is prescribed. For "Development" in areas of High or Medium Bushfire Hazard as identified on Land Characteristics Map – Bushfire Hazard Areas: AS38.2 Firebreaks or fire maintenance trails are provided in accordance with Schedule 1, Division 6: Standards for Roads in Bushfire Hazard Areas, Firebreaks and Fire Maintenance Trails, Section 6.2.	
PC39 Transport Infrastructure Separation distances are provided to ensure: (a) transport infrastructure items are protected from incompatible "Development"; and (b) an appropriate standard of amenity and public safety is provided to adjoining "Uses".	AS39 "Buildings" and "Structures" maintain a minimum separation distance to Rail Lines and State Controlled Roads (as identified on Land Characteristics Map – Features Map) as stated in Schedule 2, Division 4: Separation Distances – Infrastructure Items, Section 4.1.	**R39** There are no buildings or structures in proximity o Rail Lines or State Controlled Roads.

6.0 CONCLUSIONS

6.1 SUMMARY OF COMPLIANCE

The subject site is located at Monklands Road, Hobartville and is located adjacent to the proposed Galilee Coal Mine. The application relates to land located 30km north-west of Alpha and is described as Lot 2 on SP136836.

The project is located within the local government area of Barcaldine Regional Council and is covered by the Jericho Planning Scheme. The subject site is contained in the Rural zone.

The proposal involves development of a 1,400 MW ultra-supercritical power station adjacent to the Galilee Coal Project and will have the dual purpose of servicing the public network and proving the power needs for the Galilee Coal Project mine operations.

The purpose of this report is to carry out an assessment of the proposal against the applicable local and state planning instruments. This report concludes that the proposal generally complies with the relevant planning instruments. The Power Station has been located in area where it would not;

- involve the clearing of significant vegetation;
- involve significant works in mapped waterways;
- significantly impact on any rare or threatened species;
- significantly impact on any sensitive receptors;
- introduce traffic into highly trafficable local roads;
- significantly impact on nearby State Controlled Roads.

It is considered that there are sufficient grounds to warrant approval of the application based on the following points;

- The proposed public utility will provide a modern and efficient power plant that will allow the replacement of older plants, resulting in environmental benefits such as a reduction in greenhouse gases (Katestone Assessment Report – **Appendix A**).
- The project has been located close to high energy users in the Galilee Basin and close to the raw supply of coal needed for the Power Station
- The project will provide local reinforcement to the existing power supply
- The project will provide long term stable power supply for the network
- The project will provide local jobs as well as a $1.3 billion increase in real income into the Barcaldine Regional Council LGA
- The construction and operation phase will be appropriately managed to ensure negative impacts to the surrounding environment and community are minimised
- The specialist reports forming part of this application have determined that the project would not cause significant adverse impacts on the local area with the appropriate mitigation measures that have been identified.

6.2 RECOMMENDATION

After consideration of the proposal with respect to the surrounding land uses, and the relevant aspects within the Planning Scheme, it is our recommendation that Council and the relevant State Assessment Agencies support the proposed Public Utility (Power Station and Associated Infrastructure), Environmentally Relevant Activities and Hazardous Chemical Facility subject to reasonable and relevant conditions.

Appendix A:
Galilee Power Project – Monklands: Air Quality and Greenhouse Gas Assessment. Katestone Environmental Pty Ltd.

Appendix B:
Proposed Galilee Power Project Monklands Assessment and Control of Environmental Noise Emission. Acoustics RB Pty Ltd.

Appendix C: MNES Fauna - Emissions and Noise Assessments. Austecology.

Appendix D:
Galilee Power Station Project
Material Change of Use Application
Transport Impact Assessment. GTA Consultants (QLD) Pty Ltd.

Appendix E: Preliminary Hazard Assessment. Phronis Pty Ltd.

Appendix F: Pre-Lodgement Minutes 24 April 2019

Appendix G: Pre-Lodgement Minutes 18 November 2019

Appendix H:
Additional Technical Notes on Air Quality Assessment. Katestone Environmental Pty Ltd.

Appendix I:
Preliminary Stormwater Management Plan. Phronis Pty Ltd.

Appendix J:
Watercourse/Drainage Feature Determination Supporting Information. Orange Environmental Pty Ltd.