Design Information Pack

FOR Project: ECN-041711 Modify existing load connection – ANNIE PYERS DRIVE GUNDAGAI

Design Information Issue Date: **05/09/2023**

Design Information Applicant Details:

HAMZA ABBASI ELECTRICAL DESIGN SOLUTIONS PTY LTD
38 Tompson St, NSW, 2650

Introduction

Thank you for your request for design information for the proposed supply to **Lot 2, 160191**

Project Address: 37 ANNIE PYERS DRIVE GUNDAGAI NSW 2722

Customer Name: The DOTT Developments Pty Ltd

General

1. The content of this Design Information Pack has been compiled on the basis of certain conditions and restrictions. The designer shall incorporate these requirements within the electrical reticulation design prepared for certification to Essential Energy.

2. This Design Information Pack is valid for a period of 180 days from the above date. If an updated Design Information Pack is required, please submit a new request for Design Information via the Essential Connections portal under the Essential Connections number (ECN).

3. Essential Energy is providing this information in good faith, to assist you to complete designs for certification. Essential Energy cannot and does not warrant the accuracy or completeness of the information and does not accept any liability for inaccuracies or lack of information. It is the responsibility of the applicant or Accredited Service Provider to independently confirm the accuracy or otherwise, of any information.

What you told us on your Design Information Application

Your Project Reference name: ECN-041711

You have proposed the following description of works for this project.

Upgrade of 100kVA sub to 500 kVA. Installing a new pillar as well.

Essential Energy's Specific Design Information

Essential Energy have reviewed the information submitted in the Connection Application and the Design Information Application to compile this Design Information Pack. Our officer has also extracted data from our asset management systems to provide you with relevant information to create a design.

The regulatory category determined by Essential Energy for this project is:

Commercial and Industrial Developments

Project Funding Arrangements

Essential Energy's policy CEOP2513.06 Connection Policy – Connection Charges sets out the circumstances in which Essential Energy requires a retail customer or real estate developer to pay the cost of connecting their premises or development to Essential Energy's network.

A copy of CEOP2513.06 can be downloaded from Essential Energy's website: www.essentialenergy.com.au.

In accordance with CEOP2513.06 the following funding arrangements will apply to this project:

Customer funded:

- All

Essential Energy funded:

Connection Point

The connection point on the network will be at Asset No: CE317103

Connection Point Voltage:

Existing Asset Details

The existing High Voltage Conductor is: Custom 3/2.75 SC/GZ

The existing substation size is: 100 kVA 3Ø

New Asset Details

The New Substation size required is: 500 kVA 3Ø

- New Substation High Voltage Fuses are: 25 Amp K Type
- New Substation Low Voltage Fuses are**:** 630 Amp Fuse
-

Refer to CEOS5099 – Distribution: Transformer Fusing

Primary Tap setting

Primary Tap setting for the transformer is to be included on the drawing for certification.

The primary tap setting for the transformer: 22000/433/250

Earth Fault Protection Settings for Neutron Earthing Analysis

Site Asset Number: 78-122700
Phase to Earth fault level at site (Amps): 646
X/R ratio at site: 1.69
Number of interconnected Substations:
Estimated number of connections per substation:
SEF Active: Yes
Upstream protective device: HV substation fuses

Project Specific Comments:

Commercial and Industrial Developments

The application to provide supply to Lot 529B, DP20360 with a Commercial 590 Amp Three Phase Supply has been assessed and the following site-specific design information is provided to enable a design to be developed. The information provided within this DIP is based on the concept plan and supporting documents within the application. Should the project requirements change the DIP will need to be re-issued.

As the proposed connection is located with an established overhead reticulated area Essential Energy approve the use of a 500kVA pole top substation with 630A LV fuses. In addition, EE has completed protection studies to confirm fault clearing time for installations using 2 x 240mm Al service mains with a maximum service main length of 50m is acceptable. Where consumer mains need to be installed, additional calculations may be required to confirm the clearing time is still maintained for the total circuit length (service main + consumer main). Any additional fault clearing calculations shall be performed by the applicant.

Easements will be required over the assets located within Lot 529B DP2360. (CEOP8046)

An LV connection application confirming the required load shall be submitted prior to certification of the project. Please supply a copy of the LV connection offer with the design submission.

Motor Start Requirements - Installation to comply with: AS/NZS 3000, AS/NZS 3008, VD requirements as per the Service & Installation Rules of New South Wales, Harmonics as per AS/NZS 61000.3.6 and/or AS/NZS 61000.3.7 and Handbook 264-2003 Power Quality. Please note that motors are not to be started simultaneously.

Ancillary Network Service (ANS) Fees

Ancillary Network Service fees for this project are calculated in accordance with the Australian Energy Regulator (AER), Charges for Monopoly Services.

Your client is to be advised of any Ancillary Network Service fees applicable to this project.

Total fees for this Design Information Pack are **$938.40**

Note the invoice will detail the fee type and hours charged for completing this Design Information Pack.

Other fees that may be applied to this project are listed in the document titled 'Price Schedule for Ancillary Network Services' that can be found at Essential Energy's website: (http://www.essentialenergy.com.au/content/electricity-network-pricing-and-information).

*** Note - ANS fees exclude GST and are subject to annual price increases in accordance with the National Regulatory Framework. Care should be taken to select the fee appropriate to this project type. Design certification fees will be based on the date of receipt of a complete and correct submission for certification. All other fees will be based on the work completion date. (eg. date of outage, commissioning, inspection).**

Asset Labels

Reuse existing labels for assets that are replaced or substations that are upgraded in the same location.
Additional asset labels may be obatined by submitting an asset label request via the Essential Connections portal.

Pioneer Scheme - Reimbursement

General

AER requires that Essential Energy administer a Pioneer Scheme from 1 July 2014 in accordance with the requirements of the AER Connection Charge Guidelines for Electricity Retail Customers – Under Chapter 5A of the National Electricity Rules, and Essential Energy's Connection Policy as approved by the AER.

Requirements of the Pioneer Scheme are outlined in Essential Energy's document *CEO2513.06 Connection Policy – Connection Charges*.

Project specific

The customer is required to complete and sign a *CEOF6283 Pioneer Scheme Application Form* regardless of whether a pioneer scheme is being implemented or not. The Level 3 ASP must submit the form with the design package for certification.

Essential Energy's records indicate that there **is not** a pre-existing pioneer scheme attached to the infrastructure where you request a connection.

The amount payable to Essential Energy by your customer is **$0.00**

GENERAL DESIGN INFORMATION

Easements

The Level 3 ASP should consider easement requirements during the design route analysis.

The customer is responsible for all costs associated with the easement creation including solicitor fees, surveying costs and compensation payable to affected landowners.

Where easements are to be created outside of land to be subdivided, satisfactory arrangements must be in place prior to the level 1 ASP applying to commence construction. Where all easements are contained within land to be subdivided, construction can commence prior to the execution of easement documents however, easements will need to be executed prior to applying for a Notice of Arrangement. For further information, please refer to *CEOP8046 - Easement Requirements.*

Where satisfactory arrangements have not been made at time of certification for easements outside of land to be subdivided, a *CEOF9082 – Customer Funded Project: Consent Form* shall be provided.

Easements over Crown land, Crown roads or waterways must be obtained by Essential Energy through the compulsory acquisition process, in accordance with the procedures set out in the Land Acquisition (Just Terms Compensation) Act 1991 (NSW). Please contact Essential Energy's Conveyancing team for further advice or go to the Easements area of the Essential Energy website which contains an information sheet for crown land easements.

Materials

All materials specified in the design must comply with *CEOM7004 – Materials Inventory: Contestability (Approved)*

Non-standard materials may only be used with written permission from Essential Energy. Where a non-standard material is required, please submit a non-standard approval request via the Essential Connections portal under the Essential Connections number (ECN). Your request should include full details for justification and engineering certification where required.

All assets to be removed from Essential Energy's network within this project are to be nominated on the operational form *CEOF2098 – Returned Materials Checklist* and returned to the closest Essential Energy depot, nominated by the Network Assurance Facilitator.

Network Optimisation

The Level 3 ASP must ensure that the design is carried out in such a way as to optimise future network operating and maintenance costs rather than solely minimising initial connection costs. Consideration should be given to utilising or upgrading existing assets (eg. poles and transformers) where possible.

When assessing connection proposals, Essential Energy will use network optimisation considerations to determine which connection proposals are acceptable.

Other Services

The Level 3 ASP must carry out a Before You Dig search and is responsible for ensuring that the design does not impact on other services, e.g. telecommunication, gas, water etc. BYDA information should be clearly shown on the design.

In the event the works or design needs to be varied, amended or rectified due to a conflict with other services, the Level 3 ASP is responsible for any subsequent re-design required.

The Level 3 ASP must also ensure that the design will not conflict with proposed services to be installed in conjunction with the development.

Third Party Attachments

Essential Energy has existing joint use arrangements and operates Facilities Access Agreements (FAA's) within its network that allows third party attachments to use Essential Energy assets, for example - optical fibre or telecommunications equipment. It is the Level 3 ASP's responsibility to identify and verify third party attachments and communicate with the third party as part of the design process. Where third party attachments are within the project scope this should be identified on the construction plan.

The Essential Energy form *CEOF6586 – Advice of Pole Maintenance* is available on the Essential Energy's document library and contains contact information for the level 3 ASP, this form should also be used by the level 1 ASP as part of notification for construction. Connection applicants should be aware that they will be responsible for any fees associated with relocation works required by the attachment owner.

Approvals

The Level 3 ASP must seek approvals from the local council, all road controlling authorities and any land occupier affected by the proposed electrical works. The Electricity Supply Act 1995 (NSW), State Environmental Planning Policy (Transport & Infrastructure) 2021 (NSW) and the Roads Act 1993 (NSW) have specific requirements in this regard.

In accordance with Section 45 of the Electricity Supply Act, notification of the proposed works must be given to the local council. The council is allowed up to 40 days to comment and the ASP must duly consider all responses received.

In accordance with Division 5, Section 2.45 of the State Environmental Planning Policy (Transport & Infrastructure) 2021, notification of proposed substations, or works on an existing substation, must be given to both the local council and to occupiers of all adjacent land. The council and adjacent landowners are allowed up to 21 days to comment. The Level 3 ASP must duly consider all responses received.

For works in, on or over a classified road, Section 138 of the Roads Act requires the proponent to obtain consent from the appropriate road controlling authority, and either consent, or concurrence from TfNSW.
Copies of notices to the local council and occupiers of adjacent land, any comments received or a letter stating that no response was received, and any required consent letters are to be provided to Essential Energy within the certification package.

Copies of notices to TfNSW (and other road controlling authorities where applicable) and the written consent received must be provided to Essential Energy with the certification package for any works on classified roads.

Environmental Impact Assessment

An environmental impact assessment of the project will be required. The assessment is to be completed in accordance with *CECM1000.70.- Environmental Impact Assessment – NSW.*

A completed *CEOF1070.01 Environmental Impact Assessment: Screening Worksheet* or *CEOF1070.02 Review of Environmental Factors Worksheet*, must be submitted with the design construction plans for certification by Essential Energy. An information *sheet CEOH1070.02a REF Worksheet: Information Sheet for use by Accredited Service Providers* is available in Essential Energy's online document library to assist ASPs with the completion of the environmental impact assessment.

Please ensure all supporting documentation such as threatened species searches, evidence of community consultation, and notifications to council are included in the submission package.

Vegetation Management

CEOP2010 Vegetation Clearing Guidelines for New Power Lines outlines the requirements for the clearing of vegetation prior to the installation of new overhead and underground powerlines. The document details responsibilities of Level 3 ASPs in the preparation of their design.

If the project requires the clearing (or trimming) of vegetation, the Level 3 ASP must:

1. Ensure their EIA contains details of the required clearing and approvals for the work.
2. Specify the width of the required Clearing Zone taking into account the minimum Clearing Zone dimensions and other factors such as conductor blowout.

The Level 3 ASP shall ensure that site specific vegetation to be cleared is marked on the plan view of the design drawings. The plan shall include:

- The location of vegetation to be removed relative to the proposed power line location.
- The location of vegetation that is requested to remain by the Level 3 Accredited Service Provider.
- Locations of any additional clearing required for conductor blowout.
- Any offsets in the clearing zone as a result of steep slopes etc.
- Any site specific environmental or safety hazards identified during the field inspections and by the Environmental Impact Assessment

Clearing works must not commence until design certification has occurred.

Earthing

- All earthing shall comply with the Essential Energy's policy CEOM5113.02 High Voltage A.C. Distribution Earthing Procedure.
- All earthing designs shall be based on Essential Energy's distribution earthing design software package (Neutron). A copy of the Neutron software package is available on request through neutron@essentialenergy.com.au.
- Level 3 ASPs are required to print an Earthing Report from Neutron and submit it with the design construction drawings for certification.
- Full details of the earthing design must be included on the design drawing.
- Should the customer be upgrading an existing substation, then the suitability of the existing earthing should be assessed for compliance with the current standards. If the existing earthing does not comply, it must be upgraded accordingly.

Voltage Drop Calculations

Where the design requires an alteration to the load on a Low Voltage circuit, the Voltage Drop shall be determined using 'LVDROP' software (Version 5.48 or later) or Neara. Essential Energy's *CEOM7097 – Overhead Design Manual* and *CEOM7098 – Underground Design and Construction Manual* provide detailed information on LVDROP's parameter settings, appropriate load allowances for different development types, and the maximum allowable voltage drop in an LV circuit.

An LVDROP report should be submitted with the design for certification where applicable.

Design Certification

Please note the following information regarding design package submissions:

1. In addition to specific requirements outlined in the aforementioned clauses, the design package shall be prepared in accordance with the technical design requirements as specified in Essential Energy's design and construction standards.

2. All relevant documents shall be submitted with the design for certification. (See Required Documents Schedule)

3. Essential Energy will carry out an initial review of the design package and issue certification of the design drawing to indicate that the package is compliant.

4. If it is found that the design package is not compliant with Essential Energy's technical or drawing standards, or specific design requirements, the design submission will be returned to the applicant for amendments. Design rechecking charges will be applied.

5. Certification will remain valid for a period of 6 months. If construction of the proposed works has not commenced before this period expires, the design package must be updated and re-submitted for certification prior to submission of the Notice to Commence Construction.

In certifying any design, Essential Energy makes no warranty, express or implied, that the design is:

1. Fit for its intended purpose
2. Suitable for the site conditions
3. Free of design defects (i.e. errors and omissions)

The Level 3 ASP (and Level 1 ASP at commencement of construction) acknowledges that Essential Energy has not inspected the site, and therefore, is unfamiliar with the site conditions.

Design certification is granted exclusively based on the submitted design with respect to the construction standards in force at the time. It has no reference to any underlying assumptions or conditions.

Responsibility for the correctness and suitability of the design remains with the Level 3 ASP after certification. Essential Energy will request the Level 3 ASP to correct any design defects discovered after certification is granted and resubmit the design package for certification. Design rechecking charges will be applied.

Schedule of Documents to be submitted with the Certification Package:

- Electrical Plan For Certification (in pdf and dwg format)
- LVDROP Calculations/Report
- Neutron Earthing Report
- Designer Safety Report
- RMS/Other Authority Notification
- RMS/Other Authority Consent
- CEOF9082 - Customer Funded Project - Consent Form
- CEOF9093 - Consent Form - Schedule of Works Required
- CEOF1070-01 - Environmental Impact Assessment - Screening Worksheet
- CEOF1070.02 - Review of Environmental Factors Worksheet
- CEOF2098 - Company Form (Network) Returned Redundant Materials Check List
- CEOF6283 - Contestable Works - Pioneer Scheme Application
- AHIMS Report
- Flora/Fauna Search Results
- Dial Before You Dig (DBYD)Report/Reference Number
- Enhancement Letters
- Section 45 Notifications
- Section 45 Responses

Essential Energy forms are available at: https://www.essentialenergy.com.au/partners/contestable-work

Incomplete or incorrect certification packages will be returned to the nominated Level 3 ASP to action (Design rechecking charges will apply to subsequent submissions).

Design information issued by **Name**: Steve Cunningham

Contact Number: 0408835687

List of attachments:

- Smallworld
- PowerOn
- Pole Data
- Environmental Report

Substation - North Gundagai - GNT
Feeder - Coolac - GNT606

N

CE317098

ANNIE PYERS DR

CE317097

CE317096

CE317095

CE317102

78-122700
Dog On The Tuckerbox

CE317104

CE317103

37

34

78-122855
9351 Hume Hwy

78-F988

PP59712

CE317101

CE317094

78-78779
Shell Service Centre

78-L17858

RS 9164

CE317092

CE287737

31

CE317090

CE317093

LEGEND

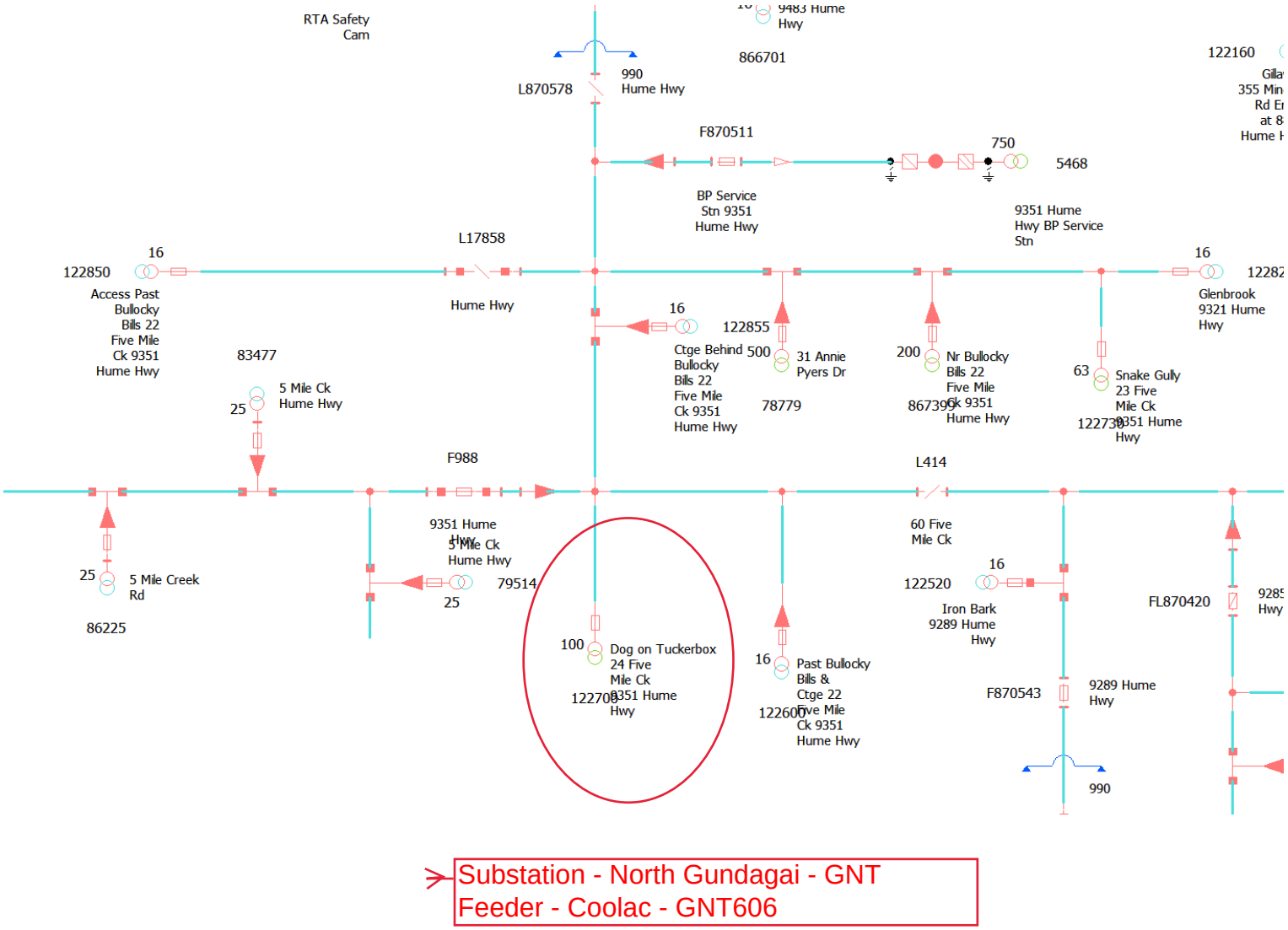
- Public Facility:Public Service Location
- Land Parcel:Coverage
- Land Parcel:Coverage
- Water Feature:Coverage

THIS MAP IS NOT SURVEYED.
PRELIMINARY PLAN ONLY.
PLEASE ADVISE ESSENTIAL ENERGY
IF DETAILS ARE INCORRECT
CALL 13 23 91
FAX 1800 354 636

0km 0.01km 0.02km 0.03km 0.04km 0.05km 0.06km

SCALE	1:1200
PLOT DATE	05/09/2023
PLOTTED BY	scunnin1
PAGE: 1 of 1	A 3

essential energy



Substation - North Gundagai - GNT
Feeder - Coolac - GNT606

Asset Label	Vicinity	Suburb	Maint Area	Feeder Area	Pole Type	Pole Length	Pole Strength	Joint Use	CZ Diameter	AG Diameter	Wall Thickness	Safety Factor	Date Installed	Last Inspection Date	Footing Type	Reinforcement	Owner	Function	Pole Condition	Span Length 1	Span Length 2	Conductor Code	Number of Wires	Pole Material	Pole Supplier	Species	Underground Cables	RFS-LGA Fire Zone
CE317102	9351 Hume Hwy Behind Dog	Gundagai	Gundagai - 78430 - Tov	Gundagai - 78430 - Tov	Pressure Impregnated(PI)	11	4	No	250	250	120	4	01-01-74	15/12/2020	Normal	None	Essential Energy	HV/LV Pole	Serviceable - Good	17	29	Almond 6/1/2.50 ACSR/GZ	3	Timber	Arthur Hassel	Blackbutt	None	None
CE317104	Hume H'Way Behind Dog Or	Gundagai	Gundagai - 78430 - Tov	Gundagai - 78430 - Tov	Pressure Impregnated(PI)	9.5	4	No	230	230	85	3.98	01-01-81	15/12/2020	Normal	None	Essential Energy	LV Pole	Serviceable - Good	9	97	Unknown	0	Timber	Koppers Australia	Gum - Spot	None	None
CE317103	Hume H'Way Behind Dog Or	Gundagai	Gundagai - 78430 - Tov	Gundagai - 78430 - Tov	Pressure Impregnated(PI)	11	4	No	315	315	150	4	01-01-82	15/12/2020	Normal	None	Essential Energy	HV/LV Pole	Serviceable - Good	73	73	3/2.75 SC/GZ	3	Timber	Koppers Australia	Gum - Spot	LV	None
CE317101	9351 Hume Hwy Cottage Be	Gundagai	Gundagai - 78430 - Tov	Gundagai - 78430 - Tov	Pressure Impregnated(PI)	11	6	No	270	270	135	4	01-01-83	11/12/2020	Normal	None	Essential Energy	HV/LV Pole	Serviceable - Good	31	73	Almond 6/1/2.50 ACSR/GZ	3	Timber	Koppers Australia	Gum - Spot	None	None

Environmental Report

Officer: scunnin1

Date/time: 05/09/2023 13:50 PM

Searched Datasets

Acid Sulphate Planning:	0
Acid Sulphate Soil Map:	1
Aquatic:	0
Atlas of Fauna:	0
Atlas of Flora:	0
RFS-LGA Fire Zone:	0
Conduit:	0
Contaminated Site:	0
Cubicle:	0
Disconnecting Link:	0
Forest Management Zone:	0
Fuse - O/H:	0
Land Council Area:	1
LEP:	3
LEP Clause:	0
Mangrove:	0
Marine Park:	0
Mine Subsidence Area:	0
Naturally Occurring Asbestos:	1
NSW Heritage Register:	0
Review of Environmental Factors:	0
REP:	0
National Park Area:	0
Salt Air:	0
SEPP:	0
SL Control Box:	0
State Forest:	0
State Forest Management Areas:	1
State Forest Section 15:	0
State Forest Section 7:	0
Substation Site:	0
Timber Reserves:	0
Water Catchment Area:	1
Wetland:	0

Acid Sulphate Soil Map

Id	Tag	Probability	Landform Process	Landform Element	Elevation	Additional	Perimeter	Area
940567	Cn(p4)	C	sulfidic material	ASS in inland lakes,	n	p	173.065 km	643.602 km²

Land Council Area

Name
BRUNGLE/TUMUT

LEP

ID	LEP Name	LGA Name	LGA Code	Plan Description	Zone No	Current Date	Supply Date	Published Date	Commencement Date
475190	LEP Load Area						17/12/2017		
470969	Gundagai Local Environmental Plan 2011	GUNDAGAI	3500	Primary Production	RU1	23/09/2011	17/12/2017	23/09/2011	23/09/2011
470983	Gundagai Local Environmental Plan 2011	GUNDAGAI	3500	Tourist	SP3	23/09/2011	17/12/2017	23/09/2011	23/09/2011

Naturally Occurring Asbestos

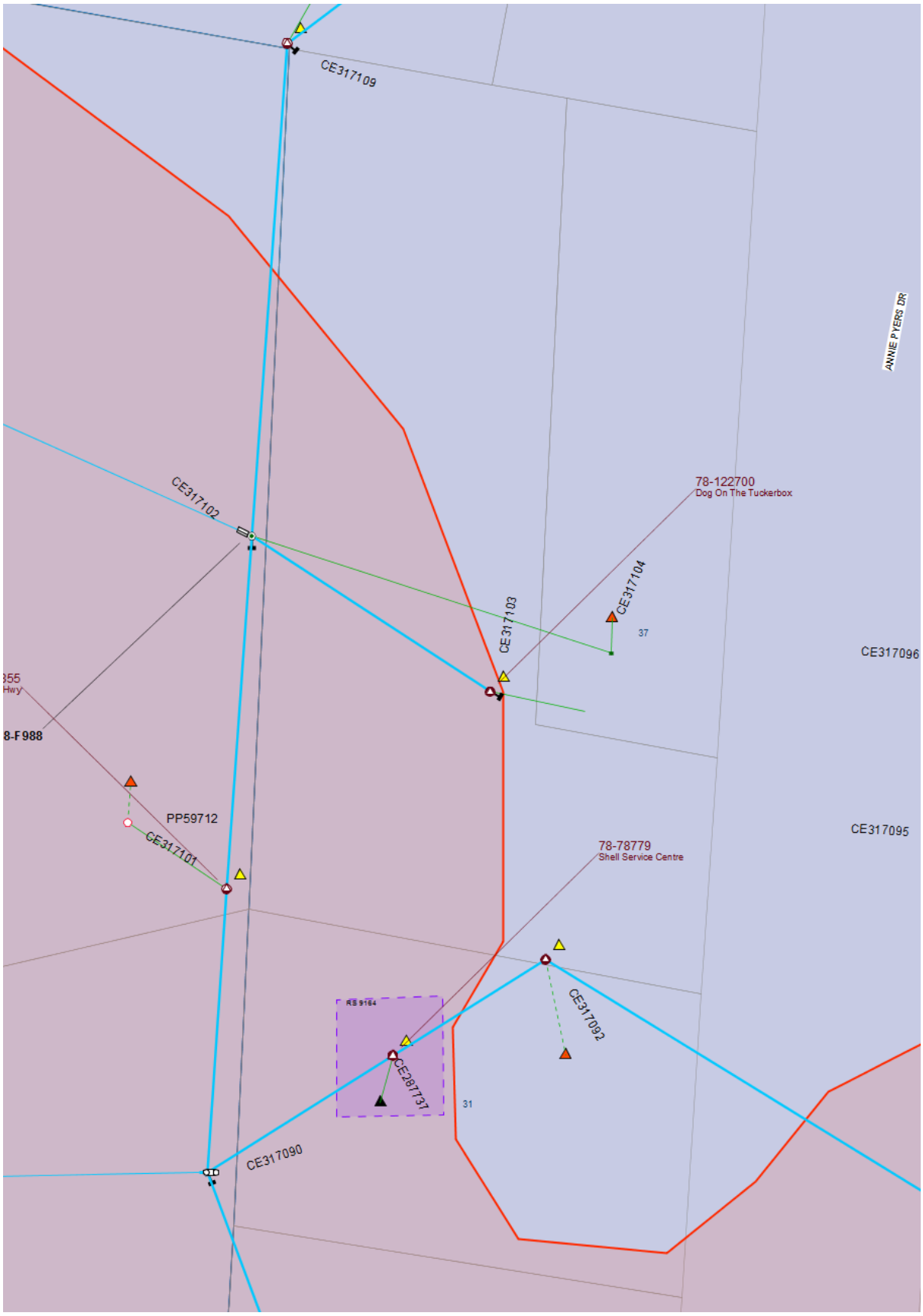
FID	Description	Potential	StratName	Scale	Notes
656	Volcaniclastic slate and siltstone; minor sandstone; rare marble	Low	Jackalass Slate	100000	Jackalass Slate 90% not favourable lithologies. Host Gundagai serpentinite and Tumut Ponds serpentinite. Petrocks: some occurrences of serpentinite. Magnetics suggests continuation of serpentinites all through the unit. Potential for smaller, unmapped se

State Forest Management Areas

ID	Management Area ID
903	52

Water Catchment Area

ID	CMA Name	CMA No	Perimeter	Area
190	MURRUMBIDGEE RIVER	10	2310.277 km	80632.477 km²


CE317109
ANNIE PYERS DR
CE317102
78-122700
Dog On The Tuckerbox
CE317104
CE317103
37
CE317096
8-F988
PP59712
CE317101
CE317095
78-78779
Shell Service Centre
RS 9184
CE317092
CE287737
31
CE317090