



Longwalls B4 to B7

Built Features Management Plan

January 2019



DOCUMENT CONTROL

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1 INTRODUCTION

Austar Coal Mine Pty Ltd (Austar), a subsidiary of Yancoal Australia Limited (Yancoal), owns Austar Coal Mine, an underground coal mine located approximately 10 kilometres south of Cessnock in the Lower Hunter Valley in NSW. The mine is an aggregate of the former Ellalong, Pelton, Cessnock No.1 and Bellbird South Collieries and is located in the South Maitland Coalfields. These operations, including coal extraction, handling, processing and transport, collectively form the Austar Mining Complex.

A modification to the Bellbird South development consent (DA29/95 MOD7) was approved under delegated authority of the Minister for Planning on 25 August 2017. The modification extends the Bellbird South consent area and permits the transfer of coal from four conventional longwall panels (Longwalls B4 to B7) within the Ellalong Colliery and Bellbird South Colliery areas to existing infrastructure for processing and transport of coal.

On the 18 September 2018, the Department of Planning and Environment approved the shortening of Longwall B4 by 279m due to geological factors and the occurrence of coal burst incidents in the LWB4 panel.

The location of Austar's mining areas, and previous mining is shown with the Austar Mine Complex in **Figure 1**.

1.1 SCOPE & OBJECTIVE

The objective of this Built Features Management Plan (BFMP) is to identify the framework for management of subsidence induced impacts on built features from secondary extraction of longwall panels LWB4 to LWB7 within the Greta Seam at Austar using conventional longwall mining techniques (the **Extraction Plan Area** see **Figure 2**).

The objective of the Built Features Management Plan will be achieved by:

- Identifying the built features within the Extraction Plan Area and their owner;
- Identifying the predicted subsidence impacts and/or consequences for the Built Features within the Extraction Plan Area in general terms (specific information for each built feature to be included in individual Built Feature Management Plans);
- Identifying the management activities (including consultation, monitoring, and remediation method) prepared to address the predicted subsidence impacts for Built Features; and
- Identifying the review and reporting activities to allow for assessment of the performance of Built Features management measures by Austar, and identification of areas where either continual improvement may be achieved, or management of unpredicted subsidence impacts can be managed.

The BFMP has been prepared to address conditions of DA 29/95 (as modified), and structured in general accordance with draft *Guidelines for the Preparation of Extraction Plans* provided to Austar

Coal by the Department of Planning and Environment in 2016. The BFMP is a component plan to the overall Extraction Plan for LWB4 to LWB7.

The document will focus on the predicted consequences of subsidence, and how these consequences may be managed. Impact assessment information will largely not be presented, though is available within the relevant Subsidence Assessment reports prepared by MSEC for the Longwalls B4 to B7 (MSEC903 & MSEC966).

2 PERFORMANCE OBJECTIVES

Performance objectives in relation to subsidence impacts in the LWB4-LWB7 Extraction Plan Area from DA29/95 are presented in **Table 2.1**.

Table 2.1 **Performance Objectives from DA29/95**

Domain	Rehabilitation Objective
Built features	<p>Repair/restore/replace to pre-mining condition or equivalent unless the:</p> <ul style="list-style-type: none">• The owner agrees otherwise; or• Damage is fully restored, repaired or compensated for under the <i>Mine Subsidence Compensation Act 1961</i>.
Community	<ul style="list-style-type: none">• Ensure public safety

3 BUILT FEATURES MANAGEMENT

3.1 LAND OWNERSHIP

The Extraction Plan Area extends underneath Cessnock City Council roads as well as private rural residential land holdings, privately owned access tracks and Crown land. Land ownership is shown in **Figure 3**.

3.2 IDENTIFICATION OF BUILT FEATURES AND MANAGEMENT

Built features within the Extraction Plan Area and the relevant owners are presented in **Table 3.2** and are shown on **Figure 4**. The proposed manner of specific management for each built feature is also provided. Stakeholder contact details are provided in **Appendix A**.

3.2.1 INDIVIDUAL BUILT FEATURES MANAGEMENT PLANS

Austar proposes to manage individual owners of built features using an owner specific BFMP. The individual BFMPs will be developed progressively during extraction within the Extraction Plan Area in consultation with the relevant built features owner prior to subsidence effects occurring on the particular Built Feature and will be submitted to the Secretary of DPE. **Table 3.1** provides the forecast timing for longwall extraction. **Table 3.2** provides the proposed timing for development of the individual BFMPs in relation to impacts from longwall extraction.

Table 3.1 Forecast Timing for Longwall Extraction

Panel	Start Date	End Date	Estimate Duration (Days)
LWB4	October 2017	November 2018	400
LWB5	January 2019	June 2019	180
LWB6	August 2019	January 2020	150
LWB7	March 2020	May 2020	120

3.2.2 MANAGEMENT OF PUBLIC SAFETY RELATING TO BUILT FEATURES

Public safety matters relating to Built Features will be identified in individual Built Features Management Plans. Any specific public safety management controls recommended during the development of individual Built Features Management Plans (including from structural engineer inspections) shall be incorporated into the Extraction Plan – Public Safety Management Plan LWB4 to LWB7.

Table 3.2 Built Features Associated within the Extraction Plan Area and Timing for Preparation of Individual BFMPs

Asset	Description	Ownership – Folio Identifier	Specific Management Plan	Timing for preparation of BFMP	Safety Actions
Public Roads	Sandy Creek Road (sealed)	Cessnock City Council	Public Safety Management Plan BFMP – Cessnock Council	Prior to LWB4 impacting	Erect subsidence warning signage and contact details
Electricity Transmission Lines	11 kV Transmission Line Local Distribution lines	Ausgrid	BFMP – Ausgrid	Prior to LWB4 impacting	Inspections as per the Ausgrid BFMP
Telecommunications infrastructure	Local Copper Cables	Telstra	BFMP – Telstra	Prior to LWB4 impacting	Inspections as per the Telstra BFMP
Crown Land	Vacant Crown Land	The Crown – 249/755225	BFMP – Crown Land	Prior to LWB4 impacting	Inspections as per the Crown Land BFMP
Bores	Groundwater Bores	WaterNSW owned bores on private land – 201/1136015	BFMP – WaterNSW Water Bores	Prior to LWB4 impacting	Inspections as per the WaterNSW BFMP
Private properties with dwelling in Extraction Plan Area	Features may include: House Water tanks Poultry sheds Rural sheds Dams Private access roads Fences Swimming Pool Gas/Fuel Storage	Duckworth – 2/819222 (A06a)	Individual landholder specific BFMPs	Prior to LWB4 impacting	As per the individual property BFMP
		Duckworth – 201/1136015 (A02d)		Prior to LWB4 impacting	
		Allan – 42/850188 (A08h01)		Prior to LWB4 impacting	
		O'Donnell – 41/850188 (C02h01)		Prior to LWB4 impacting	
Private properties without dwelling in Extraction Plan Area	Features may include: Rural sheds Water tanks Dams Groundwater bores Private access roads Fences	Jones & Hancock – 5/709474 (C05h01)	Individual landholder specific BFMPs	Prior to LWB5 impacting	As per the individual property BFMP
		Reid – 6/709474 (C04h01)		Prior to LWB5 impacting	
		Sternbeck – 18/779060		Prior to LWB4 impacting	
		Thompson – 1/726039		Prior to LWB4 impacting	
Private properties without dwelling in Extraction Plan Area	Features may include: Rural sheds Water tanks Dams Groundwater bores Private access roads Fences	Thompson – 1292/1113215	Individual landholder specific BFMPs	Prior to LWB4 impacting	As per the individual property BFMP
		Thompson – 1291/1113215		Prior to LWB4 impacting	
		Morphett – 100/255530		Prior to LWB4 impacting	
		Morphett – 13/866231		Prior to LWB4 impacting	
Private properties without dwelling in Extraction Plan Area	Features may include: Rural sheds Water tanks Dams Groundwater bores Private access roads Fences	Duckworth – 31/849031	Individual landholder specific BFMPs	Prior to LWB4 impacting	As per the individual property BFMP
		McGreevy – 30/849031		Prior to LWB4 impacting	
		RH Double Diamond P/L – 4/709474		Prior to LWB5 impacting	
		Langworthy – 121/1126842		Prior to LWB6 impacting	

Asset	Description	Ownership – Folio Identifier	Specific Management Plan	Timing for preparation of BFMP	Safety Actions
Survey Marks	Survey marks: PM 82899 SSM 43245 SSM 43246	NSW Land and Property Information	BFMP	Prior to LWB4 impacting	Notify the Land and Property Information as the per the Surveyor General's Directions No. 11 Preservation of Survey Infrastructure

4 DEVELOPMENT OF BFMP

4.1 AGENCY CONSULTATION

This BFMP forms part of Austar's Extraction Plan. The following agencies of relevance to this plan are involved in assessing the Extraction Plan and key component sub-plans of relevance to Built Features:

- Department of Planning & Environment, Division of Resources and Geosciences; and
- Department of Planning and Environment.

Additionally, Austar has consulted with Subsidence Advisory NSW (SA NSW) personnel in relation to the role of SA NSW in relation to subsidence impact management to Built Features, and the likely timing of mining beneath those built features. These discussions have been used to frame the management plan and individual infrastructure owner BFMPs.

4.2 PROPERTY OWNER CONSULTATION

The Bellbird South LWB4-B7 modification was submitted for approval in May 2017. Leading up to the approval, Austar consulted with landholders within the LWB4-B7 area via mail, meetings, and through the Austar Community Consultative Committee in relation to predicted impacts and proposed mitigation strategies that have been formalised in the Extraction Plan and sub-plans.

Within the Extraction Plan Area, Austar has reached agreement with several private landholders to allow Austar to access the land to undertake environmental monitoring. Austar will continue to consult with all landholders to offer pre-subsidence impacts inspections of Built Features proposed under this BFMP (including inspections by a structural engineer for building structures, where access is granted), to assist with any claim made under the *Coal Mine Subsidence Compensation Act 2017* (CMSC Act) (if these are required).

On 19 May 2017, all landholders within the Extraction Plan Area (private and Crown Land) were provided with an update on the Bellbird South LWB4-B7 modification and the preparation of landholder specific Built Features Management Plans. As of January 2019, all landholders, except one whose property will not be impacted until extraction of LWB6, have received BFMPs.

Landholders within the Extraction Plan Area have been provided with regular updates on mining progress, subsidence and other environmental monitoring results including the update of their BFMP if necessary due to the shortening of LWB4.

4.3 INFRASTRUCTURE OWNER CONSULTATION

Austar has consulted with infrastructure owners to develop individual Built Features Management Plans to manage potential subsidence effects. Owners include:

- Public Roads (Cessnock City Council);
- Telstra; and
- Ausgrid.

Telstra (Mr Mark Schneider) were contacted on the 8 May 2017 in relation to management of Telstra's assets to potential subsidence impacts. Telstra directed Austar to their representative in relation to potential subsidence management (Mr Colin Dove). Austar engaged Mr Dove to prepare a BFMP- Telstra to manage potential impacts on serviceability to Telstra's communications infrastructure.. This plan was approved by Telstra on the 21 September 2017 and is currently being reviewed due to the shortening of LWB4.

A BFMP – Ausgrid will be prepared in consultation with Ausgrid's Manager of Customer Supply and Planning and Reliability, Lower Hunter, Mr Patrick Boyle to assist the management of serviceability of Ausgrid's assets during subsidence. This plan was approved on the 26 October 2017 and is currently begin reviewed due to the shortening of LWB4.

A BFMP – Public Roads has been prepared in consultation with Cessnock City Council Design Delivery Manager, Ms Katrina Kerr to assist in the management and repair of any public safety issue. Cessnock City Council, including Council's Asset Engineer, were consulted during meetings in the preparation of the Environmental Assessment for LWB4-B7. Council has been provided with an update on the potential impacts to Sandy Creek Road and culverts on the 5 May 2017, and a draft BFMP for LWB4-B7 on 31 August 2017. Council approved the plan on the 15 October 2018. A review is currently being undertaken due to the shortening of LWB4.

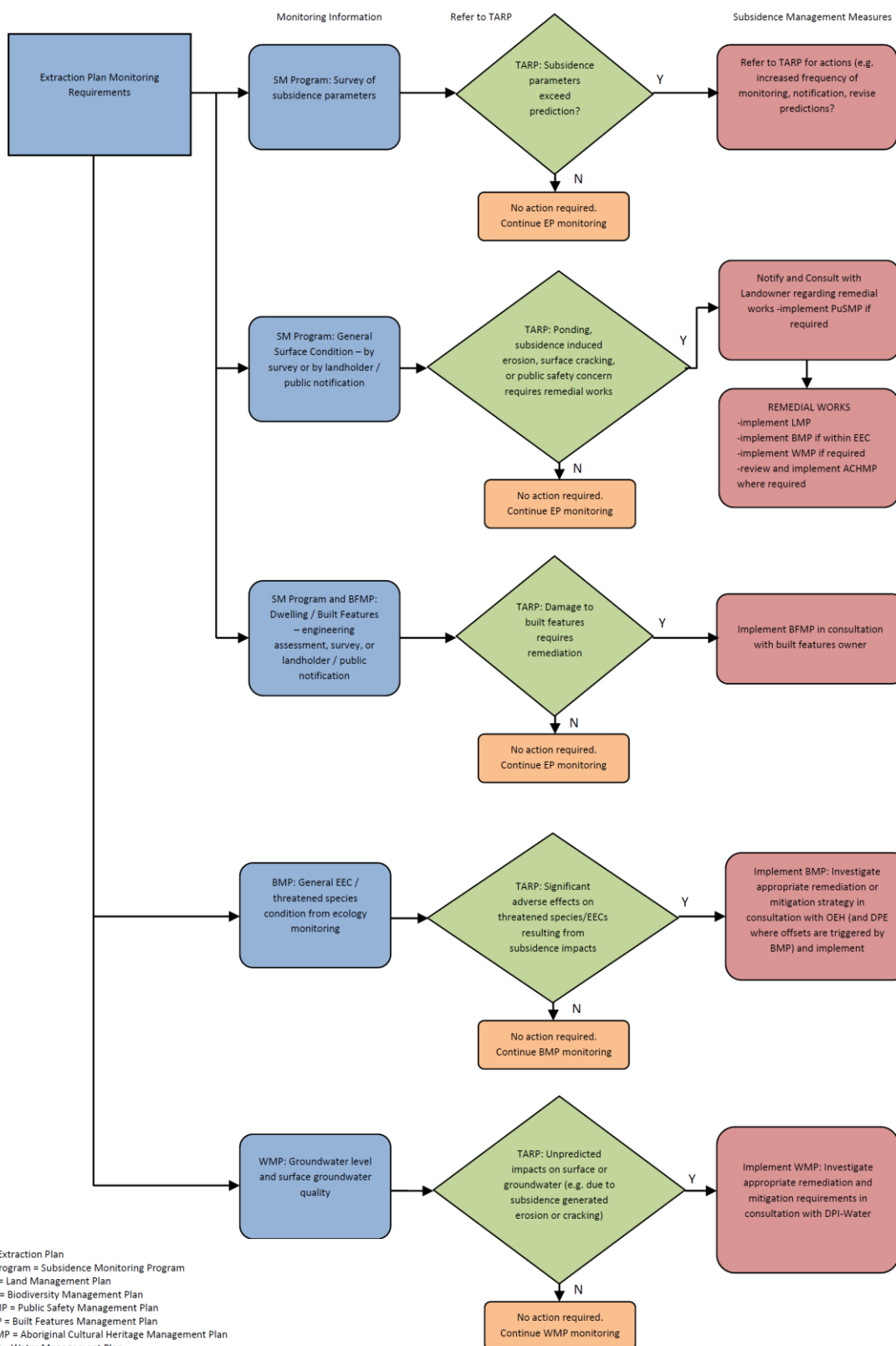
A BFMP – WaterNSW has been prepared in consultation with WaterNSW to assist in the management and repair of groundwater monitoring bores owned by WaterNSW in the Extraction Plan Area. WaterNSW Hydrometric Officers have been consulted in February 2017 regarding the preparation of a draft BFMP to manage WaterNSW assets within subsidence affected areas. This plan was finalised on 23 March 2018 prior to subsidence impacts occurring to WaterNSW bores from LWB4-B7. A review is currently being undertaken due to the shortening of LWB4.

The Land and Property Information (LPI) were notified as per the Surveyor General's direction No. 11 *Preservation of Survey Infrastructure* of potential impacts to permanent and state survey marks within the Extraction Plan area prior to subsidence impacts. Once subsidence impacts have completed, Austar Mine will liaise with the LPI and the Mine Subsidence Board regarding re-establishment of disturbed survey marks. Survey marks within the Extraction Plan area are shown on **Graphical Plan 2**.

5 SUBSIDENCE MONITORING AND MANAGEMENT

The overall framework of subsidence monitoring and management for Built Features and other environmental consequences is described simply by a flowchart which follows (as taken from the **Extraction Plan**).

EXTRACTION PLAN SUBSIDENCE MONITORING & MANAGEMENT FLOWCHART – LWB4 to LWB7



6 PLAN IMPLEMENTATION

6.1 REPORTING FRAMEWORK

6.1.1 Annual Review / Annual Environmental Management Report (AEMR)

The Annual Review / AEMR is prepared to summarise Austar's environmental performance for the reporting year and is prepared in accordance with Schedule 5 Condition 5 of DA29/95 and to satisfy Mining Lease conditions.

Performance in accordance with this BFMP, as a key component plan of the Extraction Plan, will be reported using timings and protocols as the main Extraction Plan.

6.1.2 Regular Stakeholder Reporting

The results of monitoring undertaken in accordance with individual BMFPs will be provided to the relevant built feature owner at a frequency agreed in the individual BFMP.

6.2 REVIEW OF THE BFMP

Review of the Extraction Plan (including the BFMP), and revision if necessary, shall occur where unpredicted impacts and/or environmental consequences are identified through the monitoring and management strategies proposed in the Extraction Plan.

Review of the Extraction Plan (including the BFMP) is also required following any modification to DA29/95, or if directed by the Secretary of DPE.

Any revision to the Extraction Plan (including the BFMP) must be completed to the satisfaction of the Secretary of DPE.

6.3 EXTRACTION PLAN ROLES AND ACCOUNTABILITIES

Detailed below are key personnel involved with implementing this Extraction Plan to manage subsidence, their roles and responsibilities.

Role	Responsibilities
Operations Manager	<ul style="list-style-type: none"> • Make appropriate resources available for the implementation of this Built Features Management Plan • Conduct underground mining activities in accordance with the Extraction Plan Coal Resource Recovery Plan. • Notify and liaise with DRG Inspectors (if required)
Environment and Community Superintendent (ECS)	<ul style="list-style-type: none"> • Owner of BFMP • Ensure that all environmental monitoring and reporting is undertaken in accordance with individual BFMPs • Ensuring building structures located within the subsidence affectation area are inspected by a structural engineer prior to and after undermining and appropriate management measures implemented where access is granted • Liaise with Subsidence Advisory NSW in relation to Built Features impacts • Liaise with Landholders in relation to environmental consequences of subsidence and in relation to access for the BFMP monitoring program • Notify and liaise with neighbours and community in relation to mining timing and monitoring performance; • Review and update the BFMP as required.
Technical Services Manager (TSM)	<ul style="list-style-type: none"> • Liaise with Government Agencies and Community members in relation to subsidence matters and the Extraction Plan subsidence predictions and monitoring program • Incorporate public safety management controls identified during development of individual BFMPs into the Extraction Plan - Public Safety Management Plan. • Liaise with infrastructure owners in preparation of individual Built Features Management Plans • Coordinate Mine Surveyor to ensure subsidence monitoring is undertaken in accordance with the SM Program • Review subsidence monitoring data against predictions and TARPs in order to trigger any actions required on the basis of subsidence results • Manage / implement subsidence management actions required by the Extraction Plan in relation to Built Features and Infrastructure (Ausgrid, Telstra). • Liaise with Subsidence Advisory NSW in relation to Built Features impacts • Provide support and guidance in relation to subsidence effects to Environment & Community Superintendent

Role	Responsibilities
Mine Surveyor	<ul style="list-style-type: none">• Ensure that all subsidence monitoring is completed to the requirements of the Subsidence Monitoring Program and provided to the TSM for review.

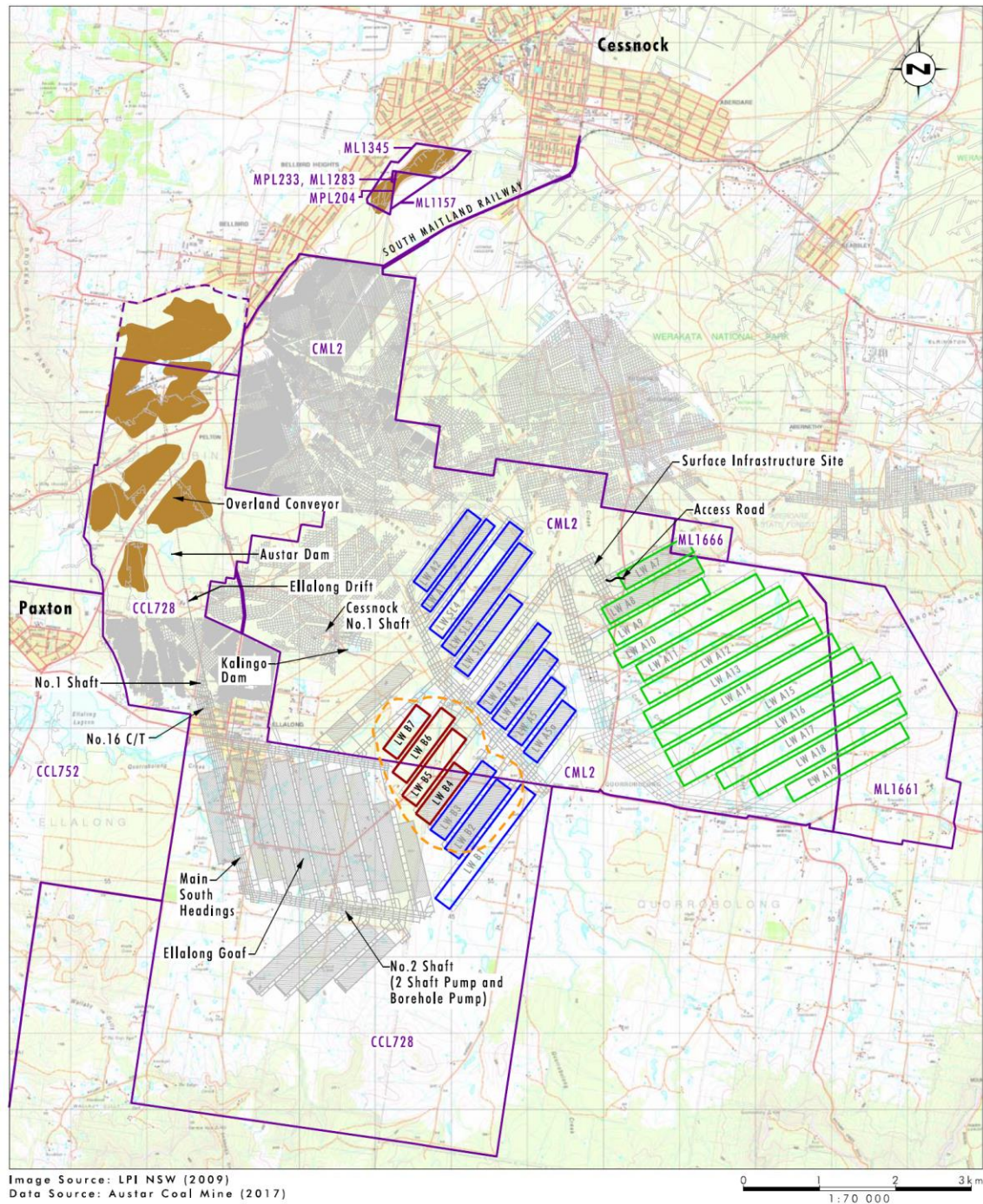
7 REFERENCES

MSEC (2017), *Longwalls B4 to B7, Subsidence Predictions and Impact assessments for the Natural and Built Features in Support of the Extraction Plan for Longwalls B4 to B7 at the Austar Coal Mine*, Report No. MSEC903, Revision A.

MSEC (2018), *Austar Coal Mine – Modified Finishing End of LWB4, Review of Subsidence Effects, Subsidence Impacts and Environmental Consequences*, Report No. MSEC966.

Umwelt (2017), *Austar Coal Mine – LWB4-B7 Modification, Environmental Assessment*, May 2017.

Figures



Legend

- LWB4-B7 Extraction Plan Longwall Panels
- LWB4-B7 Extraction Plan Area
- Bellbird South LWB1-B3 Extraction Plan, Stage 1, Stage 2 and Southland Longwall Panels (DA 29/95)
- Stage 3 Longwall Panels (PA08_0111)
- Approved Reject Emplacement Areas
- Completed Underground Workings
- Mining Lease Boundary
- Austar owned CHPP Land

File Name (A4): R10/3900_135.dgn
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FIGURE 1.1

Austar Coal Mine Complex

Figure 1

Austar Coal Mine Complex

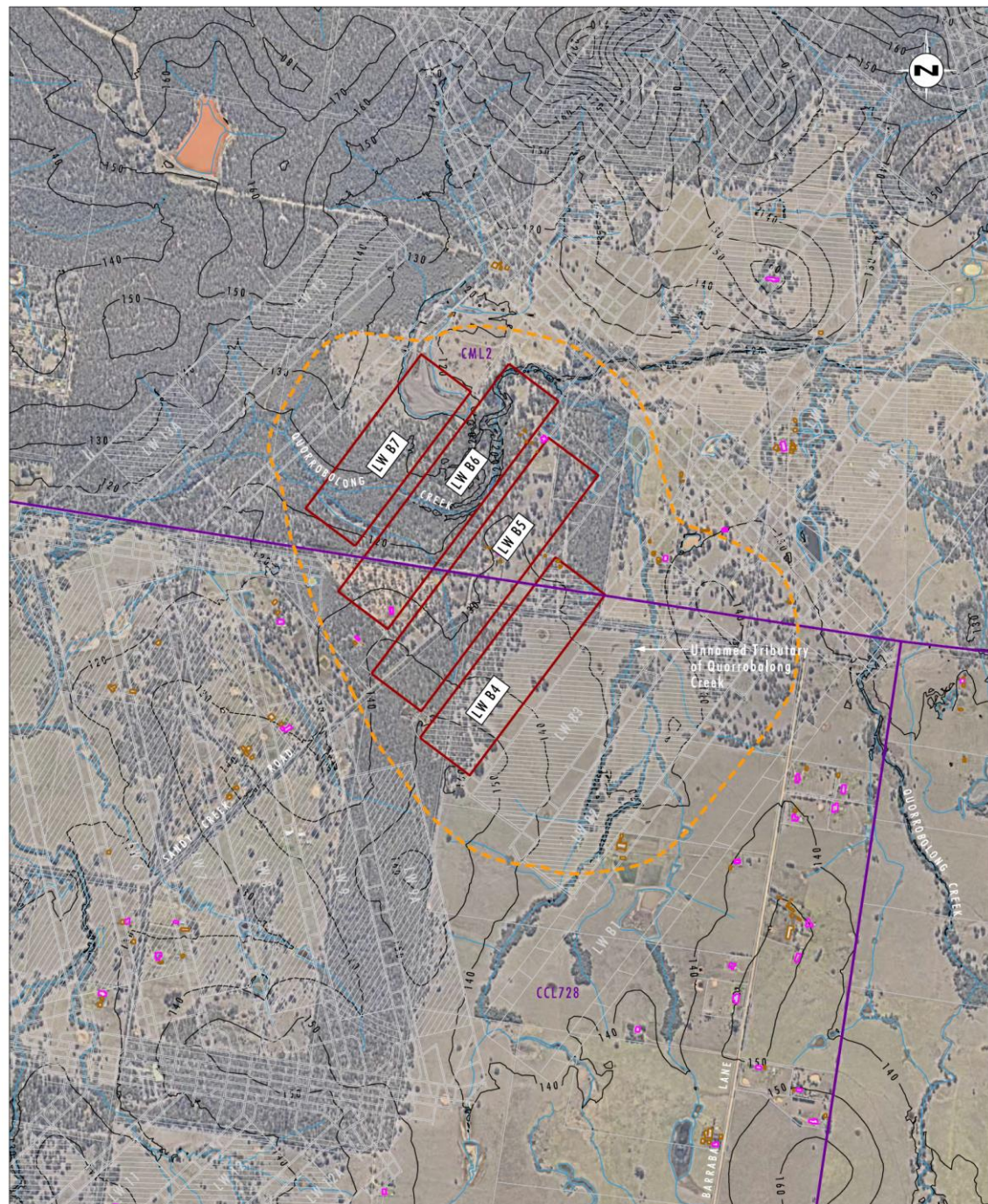










Image Source: Nearmap (Sep 2018)
Data Source: Austar Coal Mine (2017)
Note: Contour Interval 10m

Legend

-  LWB4-B7 Extraction Plan Longwall Panels
-  LWB4-B7 Extraction Plan Area
-  Mining Lease Boundary
-  Completed Underground Workings
-  Drainage Line
-  Contour
-  Dwelling
-  Other Structure

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0 0.25 0.5 1.0 km
1:20 000

FIGURE 1.2

LWB4-B7 Extraction Plan Area

Figure 2 Extraction Plan Area

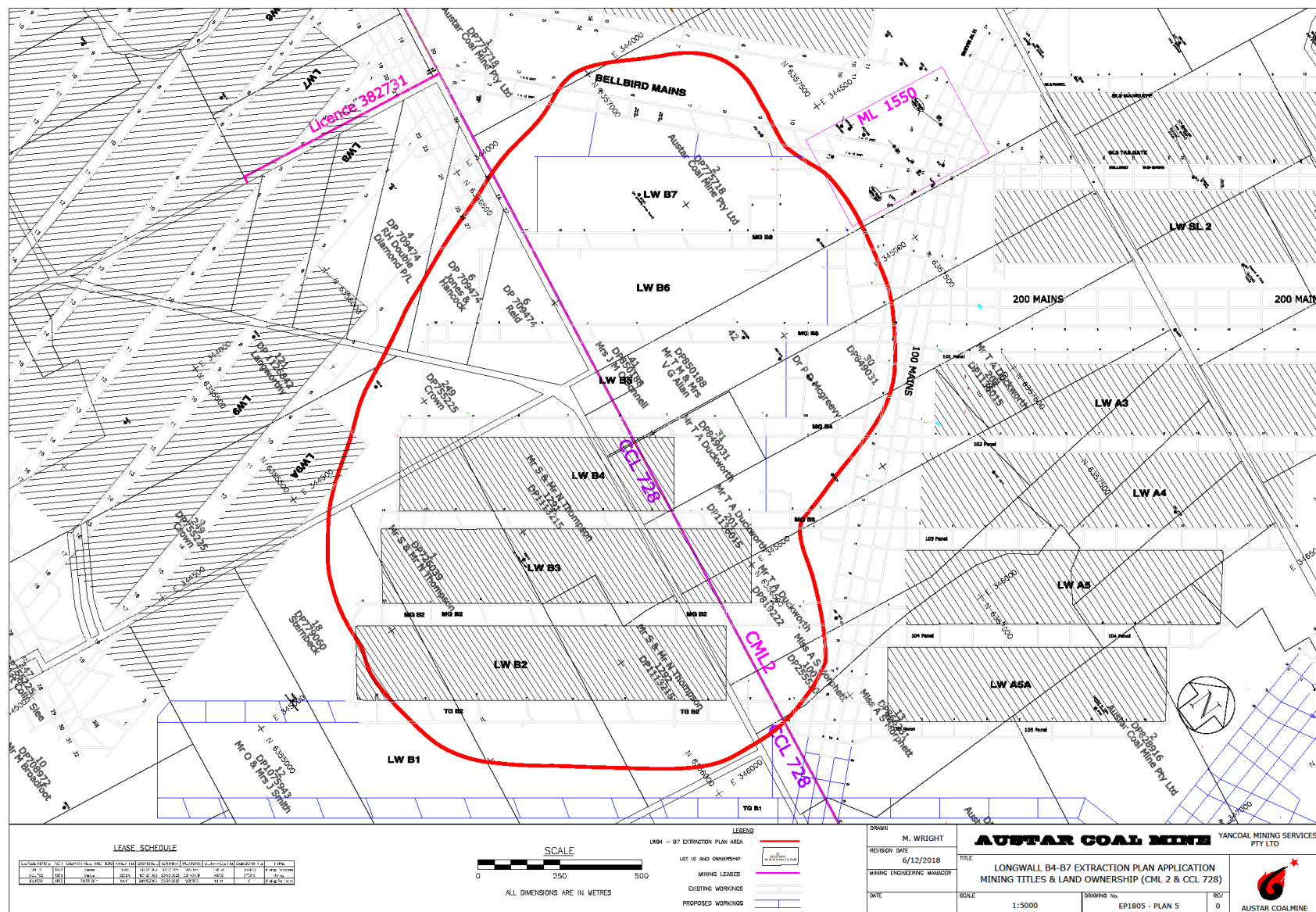


Figure 3 Land Ownership

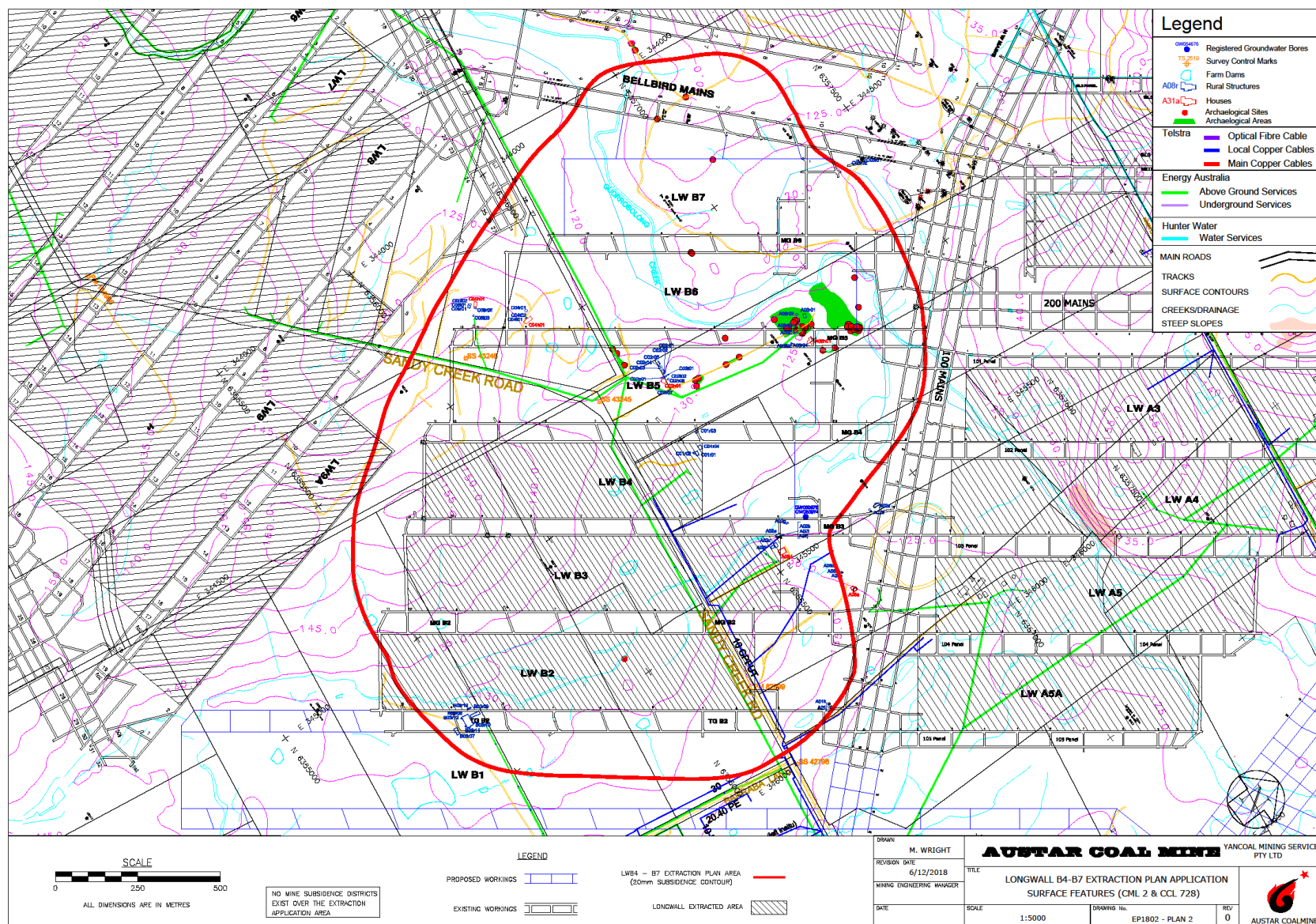


Figure 4 Surface Features

Appendices

Appendix A

Stakeholder Contact Details

Austar Coal Mine LWB4 to LWB7 Extraction Plan Stakeholder List

Position	Name	Phone
AUSTAR		
Operations Manager	Brian Wesley	4993 7356
Technical Services Manager	Bill Farnworth	4993 7279
Environment and Community Superintendent	Carly McCormack	4993 7334
Mine Surveyor	Matthew Wright	4993 7206
Austar After Hours	Control Room	4993 7220
GOVERNMENT		
SA NSW (24hr Emergency Hotline)	-	1800 248 083
SA NSW – Case Officer	Michelle Eager	4908 4300
Cessnock City Council After Hours Contact Number (Emergency)	-	4940 7816
Cessnock City Council Operations – Works Delivery Manager	Geoff Bent	4993 4284
Cessnock City Council Design Delivery Manager	Katrina Kerr	4993 4281
Department of Industry – Lands and Forestry - Crown Land	Melanie Osborne	4937 9332
Ausgrid – Manager of Customer Supply, Planning and Reliability, Lower Hunter	Pat Boyle	4910 1701
Telstra – Senior Technical Specialist	Mark Schneider	8851 2297
Land and Property Information - Senior Surveyor, Hunter Survey Infrastructure & Geodesy,	Joel Edwards	4925 9983
WaterNSW (groundwater monitoring bores)	Rod Gleeson	4904 2684
LANDHOLDERS	Refer to Austar internal contact register	