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EXTRACTION PLAN - MAIN DOCUMENT - TAHMOOR SOUTH DOMAIN - LONGWALLS SOUTH 1A - SOUTH 7A

Tahmoor Coal Pty Ltd

Document Control

Applicant:	Tahmoor Coal Pty Ltd
Mine:	Tahmoor Coal Mine
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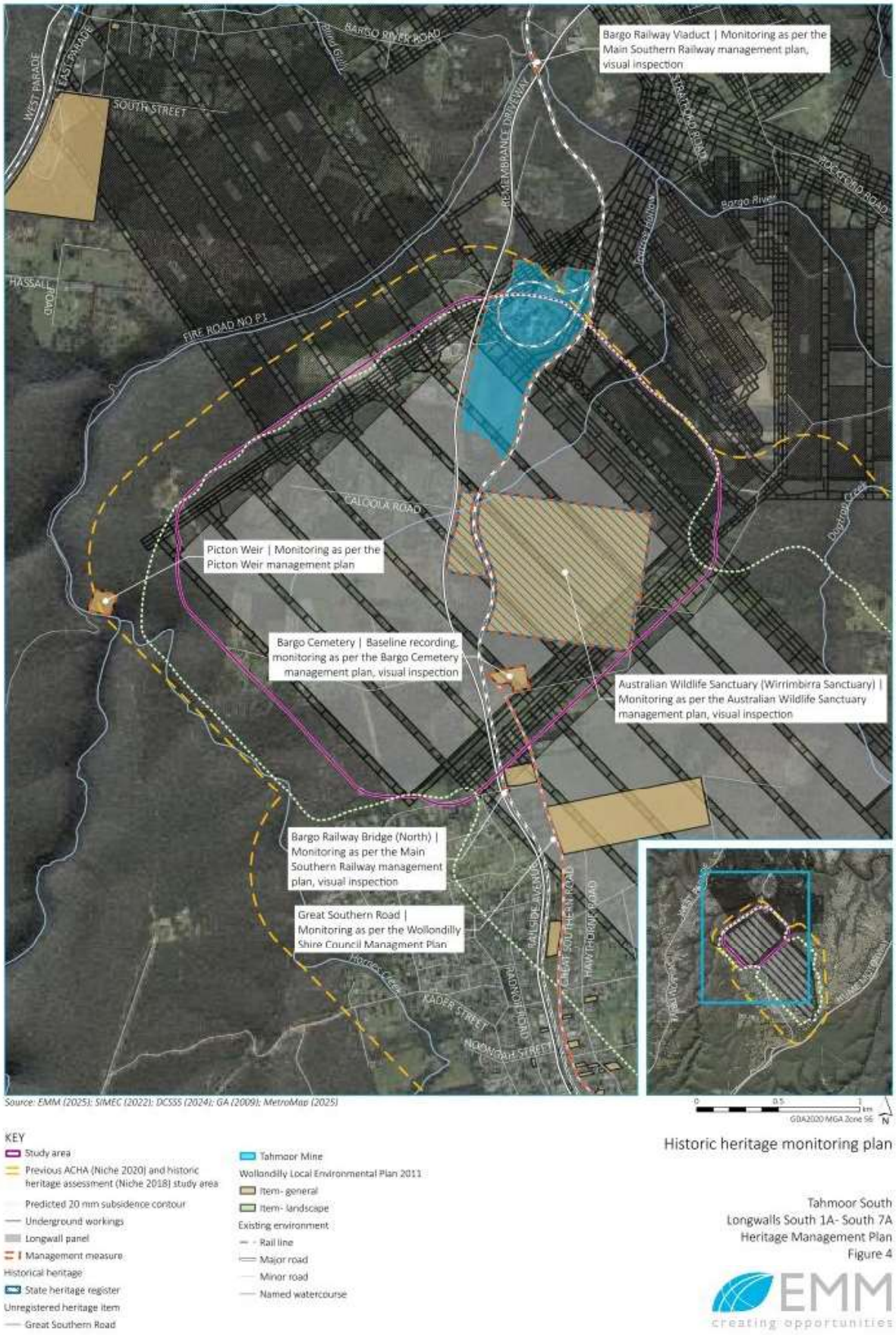

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1 Introduction

1.1 Background

Tahmoor Coal Pty Ltd (Tahmoor Coal) owns and operates the Tahmoor Mine, an existing underground coal mine located approximately 80 kilometres (km) south-west of Sydney in the Southern Coalfields of New South Wales (NSW). Tahmoor Mine surface facilities are situated between the towns of Tahmoor and Bargo within the Wollondilly Local Government Area (LGA). The mine has previously extracted longwalls to the north and west of the surface facilities and has been operating continuously since 1979 when coal was first mined using bord and pillar mining methods, followed by longwall mining methods since 1987.

The location of Tahmoor Mine in the regional context is shown in **Figure 1.**

Tahmoor Mine produces a primary hard coking coal product and a secondary higher ash coking coal product that are used predominantly for coke manufacture for steel production. Extracted coal is processed on site at the coal handling and preparation plant (CHPP) and coal clearance facilities prior to transportation via rail to Port Kembla and Newcastle for Australian domestic and export customers.

An Environmental Impact Statement (EIS) was exhibited in early 2019 to gain approval for the Tahmoor South Coal Project, which involves use of the existing surface infrastructure and the expansion of underground longwall mining to the south of the existing workings (referred to as the Tahmoor South Domain). Tahmoor Coal subsequently revised the proposed mine design and submitted amended development applications on two occasions (in February and August 2020). In April 2021, Tahmoor Coal received Development Application Approval (SSD 8445) from NSW Department of Planning and Environment (DPE, formerly NSW Department of Planning, Industry and Environment (DPIE), now NSW Department of Planning, Housing and Infrastructure (DPHI)) for the extraction of up to 4 Mtpa of ROM coal, with a total of up to around 35 Mt of ROM coal proposed to be extracted over a 10-year period.

SSD 8445 has been modified on two occasions relating to:

- Modification 1 - Extension of time to commission the Tahmoor Coal Water Treatment Plant, approved on 19 July 2022;
- Modification 2 - Underground brine disposal and transfer of mine water, approved on 13 June 2023; and
- Modification 3 - Inclusion of an additional longwall panel (Longwall South 7A (LW S7A)) to the existing approved mine plan, approved on 26 May 2025.

In addition to the SSD 8445 approval, Tahmoor Coal also received conditions of approval (EPBC 2017/8084) under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) in October 2021.

The Tahmoor South Domain is located south of the Bargo River and east of Remembrance Driveway and the township of Bargo. Longwall mining would be used to extract coal from the Bulli coal seam within the bounds of Consolidated Coal Lease (CCL) 716 and CCL 747. Thirteen longwalls are proposed in this domain which are divided into a series of seven northern (A series) and six southern (B series) longwalls. The A series, Longwalls South 1A to South 7A (LW S1A-S7A), are the focus of the current Extraction Plan.

The location of LW S1A-S7A and associated Study Area are illustrated in **Figure 2.**

It is noted that LW S3A has been shortened by 104 m, as approved by DPHI on 27 March 2024. LW S4A is shortened by 104m as approved by DPHI on 11 November 2024. Modifications to these longwalls are discussed in a separate document and further discussion in this document have been omitted.

1.2 Purpose

This Extraction Plan was prepared and updated to seek approval for secondary extraction of coal from LW S1A-S7A, in accordance with condition C8 of the Development Consent (SSD 8445). This Extraction Plan was prepared to comply with the following relevant approvals, legislation and guidelines:

- CCL 716 and CCL 747 issued under the *Mining Act 1992*;
- Department of Planning, Industry and Environment's *Extraction Plan Guidelines* (DPE, 2022);
- *Work Health and Safety Regulation 2017* (WHS Regulation) and *Work Health and Safety (Mines and Petroleum Sites) Regulation 2022* (WHSMP Regulation); and
- NSW Resources Regulator's *Managing Risks of Subsidence Guide: WHS (Mines and Petroleum Sites) Legislation* (Department of Industry – Resources Regulator, 2017).

A compliance register showing how the Extraction Plan complies with the relevant approvals, legislation and guidelines has been included in **Section 3.2** of this Extraction Plan.

The key purpose of this Extraction Plan is to outline the monitoring and management measures to be implemented to manage potential subsidence related impacts to ensure the protection of all surface / subsurface natural and built features and the protection of public safety within the Extraction Plan Study Area during extraction of LW S1A-S7A. This Study Area is defined in **Section 3.1** of this Extraction Plan.

Full details of the proposed monitoring and management measures are provided in the supporting component management plans for the Extraction Plan and summarised in **Section 4** of this document.

1.3 Scope

The Study Area applicable to this Extraction Plan is defined in **Section 3.1**.

This Extraction Plan Main Document has the following structure:

- Section 1: Introduction - This section provides background to the Extraction Plan, the purpose and scope of this Extraction Plan Main Document, and the document structure of the Extraction Plan;
- Section 2: Development - This section outlines stakeholders consulted as part of the preparation of this Extraction Plan, outlines the process of updating subsidence predictions, and outlines the Extraction Plan team;
- Section 3: Overview - This section provides an introduction to the LW S1A-S7A Extraction Plan:
    - Describes the Study Area covered by the Extraction Plan and the environmental and built features in the Study Area;
    - Addresses specific requirements set by SSD 8445 Condition C8, including detailed performance indicators for subsidence performance measures;
    - Addresses Work Health and Safety legislation specifically in relation to subsidence as a principal mining hazard in relation to the safety of 'other persons';
    - Addresses other regulatory requirements, approvals, leases, licences and guidelines relevant to the preparation of the Extraction Plan;
    - Describes all key proposed and existing mining parameters, and any special features;
    - Outlines potential subsidence effects, subsidence impacts and environmental consequences of LW S1A-S7A;
    - Describes the subsidence management measures that will be implemented to ensure compliance;

- Outlines the adaptive management approach and contingency plans in the event of exceedances of performance measures and predicted environmental consequences;

- Section 4: Key Sub-Plans - This section outlines the individual management plans intended to manage particular environmental or built features within the Extraction Plan Study Area;
- Section 5: Subsidence Monitoring Plan - This section details the Subsidence Monitoring Plan for potential subsidence impacts and environmental consequences;
- Section 6: Graphical Plans – This section lists the graphical plans that have been prepared for the LW S1A-S7A Extraction Plan Study Area, which include detailed mine plans of LW S1A-S7A;
- Section 7: Implementation - This section describes the key elements of implementation, including reporting requirements, reviews and key responsibilities; and
- Section 8: Document Information - This section provides a compiled list of references, related documents, terms, and abbreviations used in this document. In addition, this section provides the change information for this document, and a summary of the distribution of this document to stakeholders.

1.4 Extraction Plan Structure

This Extraction Plan for LW S1A-S7A comprises a main document, supporting management plans, graphical plans, and technical studies, as outlined in **Table 1**.

Table 1 Extraction Plan Structure

Key Sub-Plans	Appendix / Contributing Reports
Extraction Plan Main Document (this document)	Appendix A – LW S1A to S6A Subsidence Predictions and Impact Assessment Report (MSEC, 2022) Appendix B – Modification 3 – Longwall 7A Subsidence Predictions and Impact Assessment (MSEC, 2024) Appendix C – Master Trigger Action Response Plan Appendix D – Letters of Endorsement
Water Management Plan	Appendix A – Trigger Action Response Plan Appendix B – Surface Water level Monitoring Data Plots Appendix C – Surface Water Quality Summary Tables Appendix D – Groundwater Impact Assessment Appendix E –Remediation Progress Review Report
Land Management Plan	Appendix A – Trigger Action Response Plan Appendix B – Geotechnical Assessment (Douglas Partners, 2024a) Appendix C – Geotechnical Assessment for LW S7A (PSM, 2025) Appendix D – Land and Agricultural Resource Assessment (SLR, 2025) Appendix E – Detailed Slope Stability Assessment (Douglas Partners, 2022)
Biodiversity Management Plan	Appendix A – Trigger Action Response Plan Appendix B – Detailed Aquatic Monitoring Maps Appendix C – Detailed Riparian and Amphibian Monitoring Maps
Heritage Management Plan	Appendix A – Trigger Action Response Plan Appendix B – Aboriginal Consultation Appendix C – Teatree Hollow 2013.1: Test Excavation Methodology

Key Sub-Plans	Appendix / Contributing Reports
	Appendix D – Bargo Cemetery: Site overview and plan Appendix E – Archival record of rockshelter Teatree Hollow 2013.1 Appendix F – Archaeological Research Design – Teatree Hollow Rockshelter Appendix G – Teatree Hollow Rockshelter (#52-2-4471) – Archaeological Excavations – Completion of excavations and results
Built Features Management Plan	Appendix A - Drawings
Public Safety Management Plan	Appendix A – LW S1A – S6A Risk Assessment Appendix B – LW S7A Risk Assessment
Subsidence Monitoring Plan	Appendix A – Drawings Appendix B – Survey Specifications by SMEC Appendix C – Survey Specifications by Southern Rail Surveys
Graphical Plans	(None)

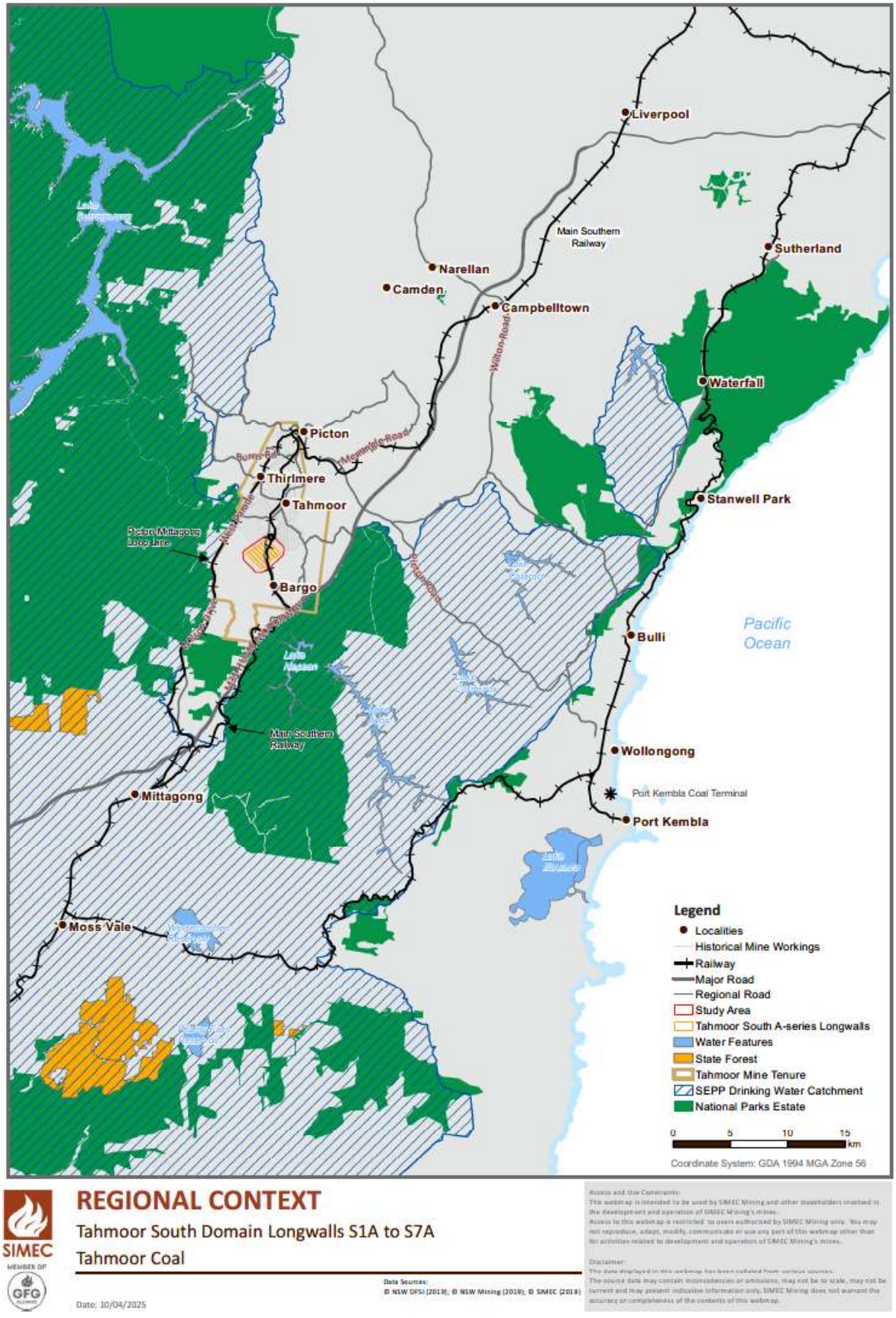

Figure 1 **Regional Context**

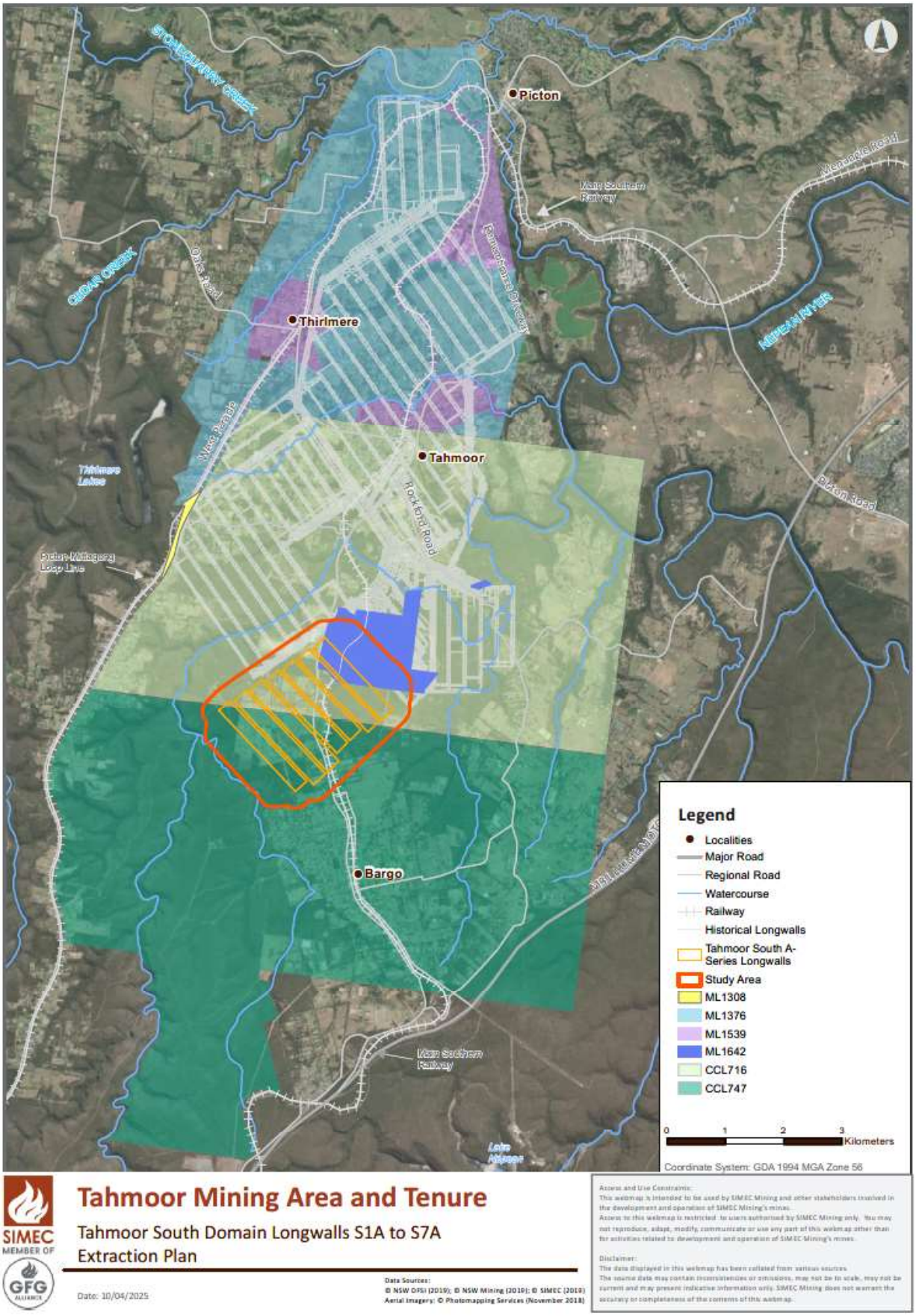

Figure 2 **Tahmoor Mining Areas and Tenure**

2 Extraction Plan Development

2.1 Stakeholder Identification and Engagement

This section provides an overview of the stakeholder engagement process with government agencies and the community, the various engagement activities undertaken, a summary of findings from these activities, and references to where these findings have been incorporated and addressed in this Extraction Plan.

2.1.1 Community Consultation

Tahmoor Coal has a long history of successful engagement with the local community in which it operates, striving to sustain positive relationships through a process of ongoing consultation and interaction. Stakeholder communication is undertaken in accordance with the *TAH-HSEC-00031 - Community Development Plan, TAH-HSEC-00120 – Community Complaints and Enquiry Procedure* and the *TAH-HSEC-00039 – Stakeholder Engagement Plan*.

A number of community consultation mechanisms are utilised throughout each phase of mining for current and future mining (including Tahmoor South Domain LW S1A-S7A, past mining areas, exploration activities, and general enquiries). These consultation mechanisms include:

- Written correspondence (e.g. Resident Information Packs, letters, newsletters, emails);
- Display of newsletters at local shopping centre;
- Meetings (face to face or phone);
- Door knocking;
- Periodic community drop-in sessions;
- 24hr call line for enquiries;
- Provision of contact details for Tahmoor Coal Representatives;
- Publication of information on the Tahmoor Coal Website; and
- Provision of information at the Tahmoor Colliery Community Consultative Committee (TCCCC) (quarterly meetings).

2.1.2 Identification of Key Stakeholders

Consultation has been completed in accordance with Condition C8 of SSD 8445, which outlines relevant stakeholders to be consulted in the development of the Extraction Plan and key sub-plans. The purpose of this consultation was to provide stakeholders with an overview of the proposed development and to seek input during the development of key sub-plans and other documents prepared in support of the LW S1A-S7A Extraction Plan described in **Section 4** of this document.

Table 2 provides an overview of stakeholders that have been consulted with during the preparation of this Extraction Plan primarily in accordance with the consultation requirements of SSD 8445.

Table 2 Stakeholders Consulted during the preparation of the LW S1A-S7A Extraction Plan

SSD 8445 Condition	Component	SSD 8445 Consultation Requirements	Additional Stakeholders Consulted
C8(b)	Preparation of Extraction Plan	• Department of Regional NSW - Resources Regulator (Resources Regulator (Subsidence)) • DPE – Water (DPE Water) (now NSW DCCEEW – Water) • Subsidence Advisory NSW	• DPE (Resource Assessments) (now NSW DPHI) • Department of Regional NSW - Resources Regulator (Resources Regulator) (Mining Act Inspectorate) • Department of Regional NSW – Mining Exploration and Geoscience (MEG)
C8(d)	Consultation for mine planning (in relation to mine roof and floor conditions)	• Resources Regulator (Subsidence)	-
C8(g)(i)	Preparation of Subsidence Monitoring Plan	• Resources Regulator (Subsidence)	-
C8(g)(ii)	Preparation of Built Features Management Plan	• Resources Regulator (Subsidence) • NSW Environment Protection Authority (EPA) • Owners of potentially affected features	• Dams Safety NSW (DSNSW) • Subsidence Advisory NSW • Wollondilly Shire Council (WSC) • Transport for NSW (TfNSW) • Australian Rail Track Corporation (ARTC) • Office of the National Rail Safety Regulator (ONRSR)
C8(g)(iii)	Preparation of Water Management Plan	• DPE Water (now NSW DCCEEW – Water) • DPE - Environment, Energy and Science (EES) Group (part of Biodiversity and Conservation Division (BCD) within the Department) (now NSW DCCEEW – Environment and Heritage)	• NSW Industry – Land & Water – Natural Resources Access Regulator – East (NRAR) • WaterNSW • DSC • EPA
C8(g)(iv)	Preparation of Biodiversity Management Plan	• EES	-
C8(g)(v)	Preparation of Land Management Plan	• Affected public authorities	• NSW Department of Primary Industries – Agriculture (DPI Agriculture) • WSC • DPE - Crown Lands Division (Crown Lands) (now NSW DPHI – Crown Lands)
C8(g)(vi)	Preparation of Heritage Management Plan	• Heritage NSW • WSC • Relevant stakeholders for heritage items (Aboriginal and non-Aboriginal heritage items)	• Registered Aboriginal Parties (RAPs)
C8(g)(vii)	Preparation of Public Safety Management Plan	• Resources Regulator (Subsidence)	-
C9	Approval of Extraction Plan	• DPE (Resource Assessments) (now NSW DPHI)	-

In addition, consultation with the following stakeholders was also undertaken:

- Resource Regulator in accordance with WHS legislation; and
- TCCCC, in accordance with Condition A25 of SSD 8445.

It is noted that the following stakeholders were not consulted with for the preparation of this Extraction Plan:

- Technical Committee required under condition C14: The Bargo Waste Management Centre is not included in the Study Area.
- NSW Department regulating the *Pipelines Act 1976* (now NSW DCCEEW – Climate and Energy Action): The Moomba to Sydney gas pipeline is not in the Study Area. Jemena have been and will continue to be consulted for the management of potential subsidence impacts to local gas pipelines within the Study Area.

A number of requests for information and comments from DPE (now NSW DPHI), the Independent Advisory Panel for Underground Mining (IAPUM), and key Government Agencies were received during the post-submission review stage of the Extraction Plan. This correspondence included:

- DPE letters with comments dated 12 July 2022, 28 July 2022, and 30 August 2022;
- IAPUM final report dated August 2022;
- DPI Agriculture letter with comments dated 3 June 2022;
- Heritage NSW letter with comments dated 6 June 2022;
- DPE Crown Lands letter with comments dated 7 June 2022;
- MEG letter with comments dated 10 June 2022;
- Subsidence Advisory NSW email with comments dated 15 June 2022;
- Resources Regulator letter with comments dated 29 June 2022;
- DPE Water letter with comments dated 1 July 2022;
- WSC letter with comments dated 12 July 2022; and
- DPE BCS (now BCD) letter with comments dated 20 July 2022.

Comments were provided by Tahmoor Coal and reviewed by DPE (now NSW DPHI) as part of the assessment process and have not been included in this Extraction Plan document.

2.1.3 Results and Outcomes of Consultation

Stakeholder engagement has been undertaken with local and State Governments, industry regulators, the local Aboriginal community, affected landowners, and the wider local community during the preparation of this Extraction Plan.

A summary of preliminary consultation with government agencies and stakeholders to date during the preparation of this Extraction Plan is provided in **Table 3**. An additional round of consultation has been completed with government agencies and stakeholders following the submission of the Extraction Plan documents, as facilitated by DPE (now NSW DPHI). This consultation provided an opportunity for detailed comments to be submitted by government agencies and stakeholders regarding the documents, to which Tahmoor Coal has provided a response. This consultation has not been discussed further in the Extraction Plan document.

Following the preparation of draft management plans for the various built features in the Study Area, relevant owners with built features located in or near the Study Area will be consulted to review and endorse the relevant Subsidence Management Plans that outline the management of their built features during LW S1A-S7A extraction. Tahmoor Coal has completed such consultation with built feature owners as part of previous longwalls and has well-established relationships with built feature owners in the local area, who are familiar with the process and structure of the management plans.

The following built feature owners have been / will be consulted regarding the corresponding management plans for built features in or near the Study Area:

- Endeavour Energy for the management of electrical infrastructure;
- Jemena for the management of gas infrastructure;
- Sydney Water for the management of potable water infrastructure and sewer infrastructure;
- Telstra for management of Telstra-managed telecommunications infrastructure;
- NBNCo for management of NBN-managed telecommunications infrastructure;
- TPG for management of TPG-managed telecommunications infrastructure;
- Australian Rail Track Corporation (ARTC) for the management of the Main Southern Railway and associated infrastructure;
- Wollondilly Shire Council (WSC) for management of public roads, culverts and bridges, and the Bargo Cemetery;
- Dams Safety NSW for management of Picton Weir;
- Tahmoor Coal for the management of the Tahmoor Mine Site and associated built structures and infrastructure at 2975 Remembrance Driveway, Bargo;
- Wollondilly Anglican College for the management of the school at 3000 Remembrance Driveway, Bargo;
- Bargo Petroleum and Road Tested Spares for the management of the petrol station and wreckers yard at 3030 Remembrance Driveway, Bargo;
- Inghams for the management of the Inghams Bargo Breeder Farm (chickens) at 3030 Remembrance Driveway, Bargo and the Inghams Turkey Farm at 100-110 Yarran Road, Bargo;
- Tahmoor Garden Centre for the management of the property at 3070 Remembrance Driveway, Bargo;
- National Trust NSW for management of the Australian Wildlife Sanctuary property and structures at 3105 Remembrance Driveway, Bargo;
- MKD Machinery for the management of built structures at 3165 Remembrance Driveway, Bargo;
- Pamak Hobbies for the management of the garden railway at 40 Great Southern Road, Bargo;
- Canine Country Club for the management of built structures at 85 Yarran Road, Bargo; and
- Bargo Valley Product Pty Limited for the management of built structures at 80-90 Yarran Road, Bargo.

In addition, a Built Structures Management Plan has been prepared for the management of privately-owned built structures in the Study Area.

Table 3 Summary of Key Issues Raised and Outcomes of Consultation Undertaken for LW S1A-S7A Extraction Plan (referred to as per previous Department names)

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
NSW Department of Planning and Environment (DPE) – Resource Assessments	A letter seeking approval of suitably qualified and experienced persons to prepare the Extraction Plan was sent on 14 September 2021.	Approval of suitably qualified and experienced persons to prepare the Extraction Plan was received from DPE on 26 November 2021.	Noted.
	A meeting was held between representatives of DPE (Jessie Evans and Gabrielle Allan) and Tahmoor Coal via teleconference on 20 December 2021. This meeting was an opportunity to outline the proposed LW S1A-S6A Extraction Plan, the key features in the Study Area to be monitored and managed, and stakeholder consultation currently in progress.	DPE noted that Jessie Evans is taking over as point of contact for Tahmoor Coal from Stephen O'Donoghue.	Noted.
		DPE asked how the proposed impact to the Aboriginal heritage item (AHIMS Site #52-2-4471, rockshelter) compares to the performance measures.	Tahmoor Coal advised that this would be addressed in the Heritage Management Plan as part of the Extraction Plan. Tahmoor Coal noted that there may be indirect harm and a partial loss of value for the item.
		DPE interested in management of the petrol station during subsidence.	Tahmoor Coal noted that petrol stations have been successfully undermined by previous longwalls at Tahmoor Mine. A subsidence management plan for this property will be prepared to manage impacts from subsidence.
		DPE enquired how many landowners are above the A longwall series.	Tahmoor Coal noted that the number is less than that for the B longwall series and most are situated along Caloola Road and nearby streets. Tahmoor Coal noted that consultation with all residents within the Study Area has started, including the provision of the resident information packs, and offering of Pre-Mining Inspections for those residents within the 20 mm subsidence contour for the first few longwalls. Tahmoor Coal noted that the next round of landholder consultation will be provided early 2022.
		DPIE advised that a meeting with DPE and other government agencies should coincide with lodgement of the Extraction Plan. The meeting should be an overview only to prepare agencies for their review of the Extraction Plan. A site visit should also be included.	Tahmoor Coal will liaise with DPE to set up this meeting and site visit at the time of lodgement of the Extraction Plan.
		DPE advised that there are no set criteria to determine the involvement of the Independent Advisory Panel for Underground Mining (IAPUM), and the decision is made once government agency comments are received and reviewed.	Noted.
	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	As of 18 May 2022, no response to the letter of consultation has been received from DPE Resource Assessments, however two meetings have been held to discuss the proposal.	Noted.
		Jessie Evans taking lead on assessment going forward.	Noted.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
	A meeting was held between representatives of DPE (Jessie Evans and Gabrielle Allan) and Tahmoor Coal via teleconference on 10 February 2022. This meeting was an opportunity to discuss further the involvement of the Independent Advisory Panel for Underground Mining (IAPUM) for the assessment of the proposed LW S1A-S6A Extraction Plan.	Six longwalls of approximately four years for the Extraction Plan assessment has been done previously, and ok to proceed.	Noted.
		Extraction Plans over the last 5 years are getting more complex, as well as underground mining in general, hence the introduction of IAPUM. IAPUM is likely to be involved, however will depend on agency advice and DPE ability / expertise to deal with the matter. IAPUM focus can be broad or narrow, depending on the issues at hand.	Tahmoor Coal asked if it more likely that IAPUM will be involved, can they be involved earlier on? DPE responded that there is no value in having them involved prior to the submission of the Extraction Plan. The Department can brief them earlier. It is an evolving space as to when to involve them. IAPUM receive all the agency advice and DPE briefing.
		Key considerations for the Extraction Plan: • Do the predictions meet the Performance Measures • Details of the TARPs • Sufficient and robust baseline monitoring • Adaptive management planning. Approval will depend on surface features and adaptive management proposed.	Noted.
		How will Wirrimbirra / Australian Wildlife Sanctuary be covered?	Tahmoor Coal responded that an individual subsidence management plan will be prepared, and submitted prior to the start of Longwall South 1A. Tahmoor Coal also noted that there is a good relationship with Wirrimbirra / National Trust NSW and a Land Access Agreement is in place.
		DPE suggested a one hour briefing around the time of lodgement of the Extraction Plan.	Noted.
NSW Department of Planning and Environment – Environment, Energy and Science (EES) Group	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 3 February 2022.	Noted.
		It is recommended that consideration be given to subsidence impacts to Hornes Creek which currently has good water quality and feeds into the Bargo River near Picton Weir and re-opening of fractures in the Bargo River caused by extraction of longwalls 14 – 19. In both instances, this will require an appropriate water monitoring program and a clear commitment to undertake the necessary remediation actions, should impacts occur.	Section 5 of the Water Management Plan demonstrates that monitoring locations in the Hornes Creek and Bargo River have been included in the monitoring program for this Extraction Plan. The Water Management Plan TARPs include a commitment for remediation should impacts to these systems occur as a result of longwall mining.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
		It is suggested that an update is provided on the progress of the remediation of Myrtle and Redbank Creek which outlines the outcomes of an inspection of Redbank Creek remediation works and data that demonstrates 'success' of this work.	A report on the remediation progress of Myrtle and Redbank Creek is provided in Appendix F of the Water Management Plan.
NSW Department of Planning and Environment – Water (DPE Water)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 1 March 2022 stating there are no preliminary comments at this stage.	Noted.
	The over-arching Tahmoor South Surface Water Management Plan was sent to DPE Water for review on 14 December 2021. Comments were received on 19 January 2022, and one comment was relevant to this Extraction Plan.	DPE Water requested that a record of pre- and post-subsidence state of key rock bars and pools be maintained for review of impact predictions reporting.	Pre-mining and post-mining monitoring of rockbars and pools is included in the monitoring program, as discussed in Section 5 of the Water Management Plan. This will include photographic record of these features for future reference.
NSW Department of Planning and Environment – Crown Lands Division (Crown Lands)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 2 February 2022.	Noted.
		It is envisaged that the purpose of the "Study Area" and "600m Study Area for Natural Features" outlined in the Extraction Plan, attached to your letter, will best be further explained in the plan.	The definition and purpose of the Study Area and 600 m Study Area for Natural Features is discussed in **Section 3.1.1** of this document.
		Mitigation of impacts on the Bargo River and other watercourses, as a consequence of the longwall extraction works will need to be addressed in the plan.	The Water Management Plan TARPs include a commitment for remediation of watercourses, should impacts to these systems occur as a result of longwall mining.
		Within the Longwall area, there is a substantial amount of Crown Land. This Crown Land includes Dedication 500432 managed by The National Trust of Australia for Conservation of Native Flora, Fauna (45.03 ha) including Lot 33 DP 751250, Lot 18 DP 751250, Lot 19 DP 751250, all on the eastern side of Remembrance Drive.	Land associated with the Australian Wildlife Sanctuary (managed by The National Trust of Australia) will be managed in accordance with the Australian Wildlife Sanctuary Management Plan. This land includes the three land parcels noted in the comment from Crown Land. This management plan will be prepared in consultation with The National Trust, and will be finalised prior to the commencement of Longwall South 1A extraction. Further information on management plans to be prepared for infrastructure and structures is provided in **Section 2.1.2** and **Table 5**.
		This reserve is adjoined by other Crown reserves e.g. R751250 (1784 ha), a Parish reserve for Bargo, Camden with	There are numerous lots for DP751250, however they do not appear to contain any structures.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
		purpose of future public requirements, environmental studies and training purposes.	Any waterways or dams contained within these reserve lots will be managed in accordance with the Water Management Plan. The management of flora and fauna within the Study Area will be in accordance with the Biodiversity Management Plan.
		Within the 600 m Study Area for Natural Features, identified in the Extraction plan, the Wingecarribee Shire Council holds Licence No 625498 (a Section 2.20 licence – Short Term Licence Type 1a – Combined) with Crown lands for Environmental Protection, which includes Lot 7311 DP 11410250. The account area for this licence is 9397 ha of Crown Land, so extends well beyond the Study Areas identified.	The land mentioned does not appear to contain any structures. Any waterways or dams contained within these reserve lots will be managed in accordance with the Water Management Plan. The management of flora and fauna within the Study Area will be in accordance with the Biodiversity Management Plan.
		The Crown Land area between Bargo and Tahmoor is understood to support numerous Endangered Ecological Communities and Threatened Species of Flora and Fauna. The Extraction Plan will need to address mitigation of adverse impacts of the extraction operation on flora and fauna within the Study Areas.	The Biodiversity Management Plan confirms the presence of any Endangered Ecological Communities and Threatened Species (flora and fauna) in the Study Area, as well as outlining the proposed management of ecology during mining of LW S1A-S6A.
		Further, access arrangements to be made by Tahmoor Coal Pty Ltd are not to adversely impact any Crown Land within the Study Areas.	Access to Crown Land for the purpose of monitoring will be arranged by Tahmoor Coal, and will be rehabilitated following the completion of monitoring. As per condition A39 of SSD 8445, Tahmoor Coal will consult with Crown Land and enter into a compensation agreement prior to undertaking any new development on Crown Land or Crown Roads.
		Surface disposal areas for material from the underground longwall sites will likely be documented in the plan. It is desirable that arrangements for disposal of spoil do not adversely impact on public land (including Crown land) in the environs.	This Extraction Plan discusses the management of potential impact from the extraction of LW S1A-S6A only. Details on the REA and any proposed changes as a result of proposed longwall extraction in the Tahmoor South Domain are documented in the EIS and two Amendment Reports, which were reviewed as part of the approval of SSD 8445. As per condition A39 of SSD 8445, Tahmoor Coal will consult with Crown Land and enter into a compensation agreement prior to undertaking any development on Crown Land or Crown Roads.
Department of Regional NSW - Resources Regulator (Resources Regulator)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 23 December 2021 from Resources Regulator requesting a subsidence monitoring plan for the proposed longwalls.	Tahmoor Coal provided a copy of the Subsidence Monitoring Plan on 14 May 2022 to Resources Regulator for review. Tahmoor Coal recognised that Far Field assets would form part of the monitoring plan.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
	As part of operational approvals for first workings in the Tahmoor South Domain, Tahmoor Coal has submitted notification of various High-Risk Activities which refer to the geological conditions including the roof and floor and comparison to existing conditions in Tahmoor North which are well understood by the Resource Regulator.	All of these notifications have been accepted without objection by the Resource Regulator.	Operations have been conducted in Tahmoor South for over thirty years with the knowledge and approval of the Resources Regulator. The area Tahmoor operations is conducting first workings in currently (referred to as Tahmoor South) is bounded on two sides to the north -east and southeast by old workings and as such the geology of this area is well understood on a macro level. This knowledge is compounded by the fact that no significant geological structures have been encountered within these workings or identified in exploration boreholes, the roof and floor geology throughout the longwall blocks laid out throughout Tahmoor South is therefore well understood.
Department of Regional NSW - Resources Regulator (Mining Act Inspectorate)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 25 January 2022 stating there are no specific comments at this stage.	Noted.
Department of Regional NSW – Mining Exploration and Geoscience (MEG)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 27 January 2022 stating that comments will be provided on review of the submitted Extraction Plan documents.	Noted.
NSW Infrastructure - Land & Water - Natural Resources Access Regulator (NRAR)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	As of 18 May 2022, no response to the letter of consultation has been received from NRAR.	Noted.
WaterNSW	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 10 January 2022.	Noted.
		WaterNSW confirmed that the Study Area is located outside the Sydney Drinking Water Catchment (SDWC) and Special Areas.	Noted.
		WaterNSW recommends that the proposed LW S1A-S6A Extraction Plan, including the Surface Water Management Plan, confirm the WaterNSW's assessment on the SDWC and detail relevant monitoring and management measures. This assessment concluded that the impact on SDWC would be insignificant due to 4 assumptions listed in the consultation letter.	Impacts to the Sydney Drinking Water Catchment and Special Areas are not predicted to occur. Monitoring and management measures for surface water features are detailed in the Water Management Plan.
		WaterNSW recommends that the Extraction Plan considers WaterNSW Mining Principles and Water Monitoring Guidelines for Underground Mining Activities even though the application area is located outside the SDWC and Special Areas. These documents are part of current accepted Best	These guidelines are considered in Section 5 of the Water Management Plan.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
		Recommended Practice for managing mining impacts in NSW.	
Heritage NSW	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 13 March 2022 stating there are no specific comments on the proposed extraction.	Noted.
Dams Safety NSW (DSNSW)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 11 March 2022 stating, as there are no declared dams or notification areas in the area, DSNSW has no further comments on the proposed extraction.	Noted.
NSW Environment Protection Authority (EPA)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 11 January 2022 stating there are no specific comments on the proposed extraction.	Noted.
NSW Department of Primary Industries – Agriculture (DPI Agriculture)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 4 February 2022.	Noted.
		A full assessment of the agricultural land uses in the area that may be potentially impacted so any agricultural developments and associated enterprises in the area are considered in terms of identified risks and economic disruption particularly with subsidence.	An Agricultural Impact Statement was prepared for the first Amendment Report for SSD 8445 approval. For this Extraction Plan, a Land and Agricultural Resource Assessment (SLR, 2022b) has been prepared to complement the information from the Agricultural Impact Statement, and provide any updates on agricultural development impacts from the proposed longwalls.
		Consult with the owners / managers of affected and adjoining neighbours and agricultural operations in a timely and appropriate manner about: the proposal, the likely impacts and suitable mitigation measures or compensation.	Consultation with owners of agricultural businesses in the Study Area has commenced. Tahmoor Coal will continue to consult with the owners during the preparation of a subsidence management plans for each individual agricultural business, and will monitor and manage potential impacts to the properties in accordance with these management plans. Further information on management plans to be prepared for built features is provided in **Section 2.1.2** and **Table 5**. In addition, all landowners in the Study Area have been informed by an information packaged delivered by mail of the proposed development and the subsidence impact claims process in the event that their property is damaged by mining.
		Consider possible cumulative effects to agricultural enterprises and landholders from subsidence/ other impacting events.	Given the described impacts are of a minor nature and readily managed through application of appropriate mitigation measures and management strategies, any resulting cumulative impacts on agricultural resources and enterprises are also expected to be minor and readily mitigated.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
		An assessment of the monitoring regime that will identify any changes as a result of the effects of the longwall mining, especially subsidence. This may include impacts of farm infrastructure i.e. buildings, fences, slope changes, water supply infrastructure.	Tahmoor Coal will consult with the agricultural business owners during the preparation of subsidence management plans for each individual agricultural business, and will monitor and manage potential impacts to the properties in accordance with these management plans. Further information on management plans to be prepared for built features is provided in **Section 2.1.2** and **Table 5**.
		In relation to the poultry enterprises that exist in the area, that these owner / managers as well as the processors / owners of the birds be consulted to ensure that production plans can be adjusted if required. This should have at least for 12 month period of mining activity.	Tahmoor Coal will consult with the agricultural business owners during the preparation of subsidence management plans for each individual agricultural business, and will monitor and manage potential impacts to the properties in accordance with these management plans. Further information on management plans to be prepared for built features is provided in **Section 2.1.2** and **Table 5**.
		For protected cropping enterprises (glasshouses) located in the impacted area, the slope of the glasshouses is critical for efficient irrigation so subsidence may be a potential issue. This may also be an issue for other open horticultural enterprises e.g. olives if they are irrigated with a dripper system.	Tahmoor Coal will consult with the agricultural business owners during the preparation of management plans for each individual agricultural business, and will monitor and manage potential impacts to the properties (including hothouses and greenhouses) in accordance with these management plans. Further information on management plans to be prepared for built features is provided in **Section 2.1.2** and **Table 5**.
		Dust can also be an issue for greenhouse / glasshouse light transmission so this needs to be addressed if dust levels are an issue above ground.	The extraction of LW S1A-S6A involves the extraction of six underground longwall panels and as such there will be no impact to air quality resulting from this extraction activity. All other activities associated with the Tahmoor South Project that have the potential to create dust will be undertaken in accordance with the approved Air and Greenhouse Gas Management Plan for any onsite construction as well as the ongoing operation of Tahmoor Mine.
		With water quality any increase in the total dissolved salts (TDS) or an increase in sodium level will be a limitation to any horticultural system relying on hydroponics or fertigation.	There is no predicted increase in total dissolved salts or sodium in groundwater bores associated with LW S1A-S6A. This is discussed further in the Land and Agricultural Resource Assessment (SLR, 2022b).
Subsidence Advisory NSW	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal	A response was received on 2 February 2022 stating that specific feedback on the proposed application will be	Noted.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
	provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	provided when supporting documentation has been finalised.	
		It is noted that the proposed layout includes panels that are located further to the south and southwest and of greater length than those shown in the layout submitted as part of SIMEC's project approval. Supporting documentation should include a comparison between extraction and project approval regarding predicted impacts to residential dwellings.	Tahmoor Coal confirms that the longwall layout has been straightened up, resulting in lengthening of the A series longwalls and shortening of the B series longwalls in the Tahmoor South Domain. However, as discussed in the Subsidence Predictions and Impact Assessment Report by MSEC (2022; **Appendix A**), there is no real net effect in subsidence impact to residential dwellings as a result of this change. Refer to Section 1.1 of **Appendix A** for further information.
Transport for NSW (TfNSW)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 8 March 2022 from TfNSW (Southern Region) requesting a map showing the proposed longwalls in relation to Picton Road, Hume Highway and Victoria Bridge.	MSEC provided the requested map on 9 March 2022.
		Following a review of the closest distances from the mining area to TfNSW assets, TfNSW (Southern Region) responded on 11 March 2022 that, as TfNSW assets are more than five times the depth of cover, there are no further comments for the Extraction Plan.	Noted.
		A response was received on 9 March 2022 from TfNSW (Sydney Region) stating that there are no further requirements are recommended.	Noted.
		It was noted by TfNSW (Sydney Region) that consent under Section 138 of the *Roads Act 1993* would be required for any proposed longwall extension adjacent to or under the Hume Highway, or any road/rail within the TfNSW network, as well as any works within the classified reserve. If any such work was to occur, the proponent would also need to enter into a Deed of Agreement.	As confirmed by TfNSW (Southern Region), Tahmoor Coal are more than five times the depth of cover from TfNSW assets. Therefore, these requirements are not applicable to the proposed longwalls.
		TfNSW (Sydney Region) advised that consideration should be given to the impacts of any additional traffic generated by the proposed extension of longwall mining operations.	Tahmoor Coal confirm that there will be a negligible increase in traffic generated as a result of the proposed longwalls.
		Further comments may be provided when the LW S1A-S6A Built Features Management Plan is made available as these works may impact Remembrance Driveway and the nearby school zone associated with Wollondilly Anglican College.	Noted.
		TfNSW has previously resumed and dedicated a strip of land as road along the Remembrance Driveway frontage of the subject property.	Noted.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
		No objections are raised to the development proposal on property grounds provided all buildings and structures, together with any improvements integral to the future use of the site are wholly within the freehold property (unlimited in height or depth) along the Remembrance Drive boundary.	Noted.
Office of the National Rail Safety Regulator (ONRSR)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 23 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response was received on 12 January 2022 from Resources Regulator requesting the draft plan for the proposed longwalls.	Tahmoor Coal advised that the Tahmoor South Rail Management Plan is scheduled for delivery by 500 metres of extraction of Longwall South 1A (estimated January 2023), and will be provided to ONRSR at this time. ONRSR have been involved in discussions regarding the Tahmoor South Rail Risk Assessment on 28 August 2021.
Australian Rail Track Corporation (ARTC)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 23 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	As of 1 May 2022, no response to the letter of consultation has been received from ARTC.	Noted. ARTC have been involved in discussions regarding the Tahmoor South Rail Risk Assessment completed on 28 August 2021.
Wollondilly Shire Council (WSC)	A letter introducing the Extraction Plan for LW S1A-S6A was sent on 22 December 2021. Tahmoor Coal provided a figure of the Extraction Plan Study Area, and an overview of the longwalls.	A response from Council's Assets and Transport Team was received on 21 January 2022.	Noted.
		Council noted that they can only effect repairs to road pavement in the event of an emergency. All other repairs are required to be carried out by Tahmoor Coal to the satisfaction of Wollondilly Shire Council's Construction Specifications. Suitably qualified civil contractors employed by Tahmoor Coal must be available to complete temporary restoration works as required, and after to complete the final restoration works. All cracks/damage to kerb and gutter, footpaths, drainage structure and property entrances are the responsibility of Tahmoor Coal and must be managed throughout the length of the mining activity, and permanent repairs carried out to the satisfaction of the property owner (either Council or a private party) upon the completion of any subsidence activity.	Noted. The Wollondilly Shire Council Management Plan outlines the requirements for road mitigation works in the event of damage to public roads, kerbs, gutters, footpaths or property entrances as a result of longwall subsidence.
		A response from Council's Waste and Environmental Services Team was also received on 14 February 2022.	Noted.
		It is understood that the longwalls covered by the Extraction Plan are at a sufficient distance to not result in any subsidence induced impacts to the operation of the Bargo Waste Management Centre. However, clarification by SIMEC of this understanding would be appreciated.	The Bargo Waste Management Centre is located more than 1 kilometre from the proposed LW S1A-S6A and is situated outside of the 20 mm subsidence impact area (and Study Area). Therefore, it is unlikely that the proposed longwalls will result in any subsidence induced impacts to the operation of this facility.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
		Council would expect in this regard that the Extraction Plan involve a detailed consultation program as well as identification to the greatest accuracy possible likely subsidence-related impacts to dwellings over the full duration of a particular longwall.	A Social Impact Management Plan is being prepared which will include a detailed community engagement plan. A Built Features Management Plan will also be prepared covering the predicted subsidence-related impacts and risk management to dwellings located over LW S1A-S6A.
		The Independent Planning Commission is noted to have included a condition in the Determination "for the voluntary acquisition rights for properties affected by certain types of damage that are impacted by more than one longwall". It is requested to be noted Council does not have a formal position over such acquisition. However, the offering of this process as an alternative and detailed explanation of its potential negative and positive implications to landowners would be expected.	Tahmoor Coal offers weekly visual inspections to landowners during the active subsidence periods. Should any damage be assessed that meets the voluntary acquisition requirements, Tahmoor will assess this on a case-by-case basis and liaise with government agency, Subsidence Advisory NSW who administers the *Coal Mine Subsidence Compensation Act 2017* and has guidelines for property acquisition for subsidence damage.
		An assessment of impacts to surface and groundwaters be consistent with all current scientific research that includes the Characterisation and Modelling of Geological Fault Zones Guideline publication available on the Commonwealth Independent Expert Scientific Committee (IESC) website.	An assessment of potential impacts for surface water and groundwater, as presented in Section 4 of the Water Management Plan, has been complete in accordance with current scientific research.
		A detailed geological model that identifies the likely interaction of subsidence induced fractures with the modelled groundwater environment as part of complying with the IESC publication.	The Tahmoor South Geological Model has been updated, as discussed in the Groundwater Technical Report in Appendix E of the Water Management Plan.
		A scientific based investigation over the establishment of Risk Management Zones for third order watercourses for the purposes of identifying and managing impacts associated with subsidence to the ecological health of waterways within a catchment context.	Management of watercourses in the Study Area, including those of third order, is provided in Sections 4, 5 and 6 of the Water Management Plan.
		An assessment of potential impacts of mining activities to the operation of private bores and mitigation measures to address any identified potential adverse implications.	Potential impacts to privately owned bores and the monitoring and management measures proposed is provided in Sections 4.3.3, 5 and 6.2.1 of the Water Management Plan.
		Trigger Response Action Plans and related monitoring programs that are developed as part of the Extraction Plan and Water Plan are to be scientifically based, supported by commensurate data. They are requested in this regard to include appropriate ecological focussed indicators to monitor any impacts to the ecological health of waterways at a suitable timeframe that would restrict the need for Creek Management Action Plans.	TARPs for surface water and groundwater that meet these requirements are provided in **Appendix B**, as well as Appendix A of the Water Management Plan.

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
Tahmoor Colliery Community Consultative Committee (TCCCC)	Quarterly meetings are held with the Tahmoor Colliery Community Consultative Committee (TCCCC) and representatives of Tahmoor Coal at the Tahmoor Mine or via teleconference. These meetings are an opportunity to provide the TCCCC with an update of activities at Tahmoor Mine, as well as details of the proposed LW S1A-S6A Extraction Plan. The LW S1A-S6A Extraction Plan was introduced at the TCCCC meeting on 2 December 2021.	A TCCCC Committee Member asked if Picton Weir was within the LW S1A-S6A Extraction Plan Study Area and if it would be impacted.	Tahmoor Coal responded that the Picton Weir was not within the Study Area, however in accordance with the precautionary approach, a management plan for the structure would be prepared as part of the Extraction Plan.
	The LW S1A-S6A Extraction Plan was introduced at the TCCCC meeting on 3 March 2022.	A TCCCC Committee Member asked if the quality of coal to be extracted from the Tahmoor South longwalls would be similar to that which is currently being extracted.	Tahmoor Coal responded that yes, the coal quality is similar, as is evident from old longwalls near the proposed Tahmoor South Longwalls.
		David Henry (Wollondilly Shire Council Representative) advised that the Thirlmere Lakes Research Program report has been delayed and will be ready in 3-4 weeks pending ministerial approval. Martin Krogh (DPE) will notify Council once the report is approved, and it will be circulated to TCCCC.	Noted.
Registered Aboriginal Parties	EMM Heritage Consultants, on behalf of Tahmoor Coal, sent a letter via email on 17 January 2022 to 29 Registered Aboriginal Parties (RAPs) (refer to the Heritage Management Plan for a list of RAPs) to inform them of the upcoming Heritage Management Plan scope.	The Kamilaroi Yankuntjatjara Working Group provided interim feedback stating that the rockshelter Teatree Hollow 2013.1 was of high cultural value, further investigation of the site was needed, and options for protective measures be considered. Cubbitch Barta also responded during this period reiterating the high cultural value of the rockshelter and advocated for the site's protection.	EMM and Tahmoor considered options to address this feedback through developing site management measures with a focus on archaeologically investigating the rockshelter. This was done with the aim to provide a positive cultural heritage output by contributing to Aboriginal archaeology of the local area.
	On 1 April 2022, EMM provided the draft Heritage Management Plan for RAP review and feedback. This version included options for ochre pigmentation sampling and test excavation in the draft Heritage Management Plan. A further draft of the Heritage Management Plan, along with details of a test excavation methodology for the rockshelter with art and stone artefacts was also provided to RAPs on 19 April 2022. On 14 August 2025, EMM provided the updated draft Heritage Management Plan incorporating LW S7A for RAP review and feedback.	Through further consultation during the draft HMP period, it was determined that archaeological test excavation was the most appropriate method to pursue to wholistically address RAP feedback gathered during the HMP consultation process. Following distribution of the updated draft HMP in August 2025, four groups responded with comments. Guntawang Aboriginal Resources Incorporated and Thomas Dahlstrom agreed with the recommendations of the HMP. Corroboree Aboriginal Corporation recommended that fieldwork be shared equally among the RAPs. Cubbitch Barta provided detailed feedback, supporting the recording of rock shelters and advising that no site should be assigned a low level of significance. They further recommended that all sites in Hornes Creek be considered of high cultural significance, as they "still exist today, the way the ancestors left them". They	The Heritage Management Plan provide details about the proposed test excavation, as well as further detail regarding consultation with RAPs during the preparation of this Extraction Plan. The significance of the sites in the HMP adopts those outlined in the existing Aboriginal cultural heritage assessment. It is acknowledged that these rankings primarily apply scientific significance to the classification and may contrast from views of specific Aboriginal individuals or parties. Rockshelter visual inspections will be conducted by a geotechnical engineer (PSM), and following completion of longwall panels a visual inspection will be undertaken by an

Stakeholder	Description of Consultation	Summary of Comments	Tahmoor Coal Response
		also included a request for clarification on who will undertake fortnightly monitoring inspections of the shelters.	archaeologist with RAPs, as detailed in HMP TARP – HMP1 Aboriginal Cultural Heritage Sites.
Landowners of private property within the LW S1A-S6A Study Area	Letters of consultation were sent to all landowners of private property within the LW S1A-S6A Study Area on 24 August 2021 informing residents of upcoming first and second workings. These letters included a Resident Information Pack and information about LW S1A-S6A, as well as an offer to landowners for the completion of a Pre-Mining Inspection.	Responses to this correspondence have been received with requests for PMIs.	PMIs have been scheduled where requested. Going forward, Tahmoor Coal will conduct regular consultation with landowners / occupiers in the Study Area as LW S1A commences and during extraction of LW S1A-S6A. This will include consultation via letter box drops and door knocking. A Community Drop-In session was held on 28 July 2022 at the Bargo Community Hall. Tahmoor Coal is currently in the process of consulting with built feature owners in the Study Area for the preparation of management plans for each individual built feature and will monitor and manage potential impacts to built features in accordance with these management plans.
Landowners of private property within the LW S7A Study Area	Letters of consultation were sent to all landowners of private property within the LW S7A Study Area on 30 May 2025 informing residents of the Mod 3 (LW S7A) approval. Resident Information Packs were previously provided to residents in the LW S7A Study Area on 1 November 2023.	No landowner responses or enquiries received.	

2.2 Subsidence Background

2.2.1 History of Mine Plan Changes for the Tahmoor South Domain

The Tahmoor South Domain mine plan has undergone a series of amendments since the issue of the first EIS for the Tahmoor South Project in 2014. These mine plan revisions are summarised below:

- EIS Submission (2014): Original EIS submission, which was placed on hold and subsequently withdrawn in late 2015;
- EIS Submission (January 2019): Updated EIS submission based on revised Planning Secretary's Environmental Assessment Requirements (SEARs) issued in June 2018;
- Project Amendment Report (February 2020): The mine design was modified to reduce potential environmental impacts of the Project through the reduction in the extent of longwall mining. This was achieved by the following modifications:
    i. Removal of LW 109, which was located directly beneath Dog Trap Creek. This would result in elimination of direct impacts to Aboriginal heritage items;
    ii. Configuration of the longwall layout to comprise two series of shorter longwall panels;
    iii. Reduction in the proposed longwall width, from approximately 305 m to approximately 285 m;
    iv. Reduction in the height of extraction within the longwall panels from up to 2.85 m to up to 2.6 m;
- Second Amendment Report (August 2020): The mine design was again modified to further reduce potential environmental impacts. This included the removal of two longwalls in the southern part of the mine near the township of Bargo (LW 107B and LW108B), which would result in a reduction in magnitude of subsidence impacts.

The numerous modifications of the Tahmoor South Domain mine plan have resulted in a reduction of the magnitude and extent of subsidence impacts, as well as avoidance of significant impact to sensitive surface features of the environment, including Aboriginal heritage items.

The current mine plan proposes to complete underground mining with access to the Tahmoor South Domain provided from the existing pit top facilities. This mine design consideration minimises surface impacts from mining through the avoidance of establishing new surface facilities.

A number of minor changes have been made to the mine layout since development consent was received. A summary of these minor changes is provided below (MSEC, 2022):

- The layout for LW S1A-S6A has been shifted approximately 35 m to the south-west;
- LW S2A to LW S6A have been widened by 2 m (the width of LW S1A is unchanged);
- Chain pillar widths for the tailgates for LW S3A to LW S6A have been reduced by 2 m (the chain pillar between LW S1A and LW S2A was unchanged);
- The commencing ends of LW S1A-S6A have been aligned, compared to the previous staggered layout. The outcome of the change is that LW S2A to LW S6A have been extended in length. The gap between the A and B series longwalls will be maintained, such that the future B series will be shortened when compared to the mine layout that was submitted for development consent; and
- The planned sequence has been amended, such that the A series longwalls are proposed to be

extracted in sequence. During the application for development consent, it was planned that Longwalls 101A to 103A (now renamed Longwalls S1A to S3A) would be extracted first, followed by the B series longwalls, and then the extraction of Longwalls 104A to 106A (now renamed Longwalls S4A to S6A).

Additional changes include:

- LW S3A and LW S4A have been shortened by 104m at the start end;
- The addition of LW S7A (Modification 3) to the west of LW S6A as approved by DPHI on 26 May 2025.

2.2.2 Revised Subsidence Predictions

To support this Extraction Plan, MSEC have revised the subsidence predictions for the proposed longwalls and prepared the following reports:

- MSEC1192 Tahmoor South Project – Extraction Plan for Longwalls S1A to S6A, Subsidence ground movement predictions and subsidence impact assessments for natural features and surface infrastructure (hereafter referred to as the 'Subsidence Predictions and Impact Assessment Report') (MSEC, 2022; refer to **Appendix A**).
- MSEC1348 Tahmoor Coal – Modification 3 – Longwall 7A, The effects of the proposed addition of LW S7A on previous subsidence predictions and impact assessment (MSEC, 2024; refer to **Appendix B**).

Tahmoor Coal considers that these current subsidence predictions are acceptable, and that the current mine plan appropriately balances the requirements of resource recovery, minimisation of environmental impact, and consideration of community and government agency concerns. Maximum predicted subsidence within the study area from the addition of LW S7A (Modification 3) was found to be similar to those based on LW S1A-LW S6A layout. This is because predicted maximum subsidence due to the extraction of the B series longwalls is greater than the A series and the addition of LW S7A does not influence maximum subsidence predictions associated with the B series of longwalls.

If the measured mining induced movements were to be in excess of the predicted values, a review of the model will be undertaken and would include the review of subsidence values and impacts to any surface features within the Extraction Plan Study Area.

2.2.3 Current Methods and Models used by MSEC

The following sections outline the methods and models used by MSEC to provide revised subsidence predictions for the proposed LW S1A-S7A (MSEC, 2022 and MSEC, 2024; refer to **Appendix A** and **Appendix B**). Particular note has been made regarding the process of review of the methods and models used to make predictions of subsidence effects, subsidence impacts and environmental consequences.

2.2.3.1 Incremental Profile Method

The predicted conventional subsidence parameters for the proposed longwalls have been determined using the Incremental Profile Method (IPM), which has been developed by MSEC in 1994. The method is an empirical model based on a large database of observed monitoring data from previous mining within the Southern, Newcastle, Hunter and Western Coalfields of NSW and the Bowen Basin in Queensland. This IPM subsidence prediction model has been continually developed, revised and updated since 1994, as the new additional monitoring data became available, to suite specific local geology and conditions (MSEC, 2022).

For the Tahmoor South Project, the IPM has been based on the Southern Coalfields predictive curves with calibrations for the local conditions, based on the extensive ground monitoring data from Tahmoor Mine. A discussion on the calibration of the IPM is provided in Section 3.7 of **Appendix A**, while Section 3.8 of

Appendix A discusses areas where increased subsidence has been observed in comparison with the predictions generated from the IPM**.**

2.2.3.2 2002 ACARP Method

The predicted upsidence and closure movements for the longwalls at Tahmoor Mine have been obtained using the empirical method outlined in Australian Coal Association Research Program (ACARP) Research Project No. C9067 (Waddington and Kay, 2002), referred to as the 2002 ACARP method. A comparison between the measured and predicted valley related effects for previously extracted longwalls at Tahmoor Mine has been provided in Section 3.9 of **Appendix A**.

2.2.3.3 Prediction of Strains

A linear relationship between curvature and strain provides a reasonable prediction for conventional tensile and compressive strains. In the Southern Coalfields, it has been found that a factor of 15 provides a reasonable relationship between the predicted maximum curvature and the predicted maximum conventional strains. This method is effective for predicting typical values when the ground subsides regularly with no localised or elevated strains due to near-surface geological structures or valley closure effects. The maximum strains can be much greater than these typical values and there can be considerable variation from the linear relationship.

The Subsidence Predictions and Impact Assessment Reports (MSEC, 2022 and MSEC, 2024) therefore provided a statistical approach to account for the variability, instead of just providing a single predicted conventional strain. The range of potential strains above the proposed LW S1A-S7A has been determined using monitoring data from the previously extracted longwalls at the mine. The range of strains measured during the extraction of these longwalls should, therefore, provide a reasonable indication of the range of potential strains for the proposed LW S1A-S7A. The data used in the analysis of observed strains included those resulting from both conventional and nonconventional anomalous movements, however did not include those resulting from valley related effects.

2.2.3.4 Ground Stain

Ground strain comprises two components, being normal strain and shear strain, which can be interrelated using Mohr's Circle. The magnitudes of the normal strain and shear strain components are, therefore, dependent on the orientation in which they are measured. The maximum normal strains (i.e. principal strains) are those in the direction where the corresponding shear strain is zero.

Normal strains along monitoring lines can be measured using 2D and 3D techniques, by taking the change in horizontal distance between two points on the ground and dividing by the original horizontal distance between them. This provides the magnitude of normal strain along the orientation of the monitoring line and, therefore, this strain may not necessarily be the maximum (i.e. principal) strain.

Shear deformations are more difficult to measure, as they are the relative horizontal movements perpendicular to the direction of measurement. However, 3D monitoring techniques provide data on the direction and the absolute displacement of survey marks and, therefore, the shear deformations perpendicular to the monitoring line can be determined. Shear deformations perpendicular to monitoring lines can be described using various parameters, including horizontal tilt, horizontal curvature, horizontal mid-ordinate deviation, angular distortion and shear index.

Horizontal mid-ordinate deviation has been used as the measure for shear deformation, which is defined as the differential horizontal movement of each survey mark, perpendicular to a line drawn between two adjacent survey marks.

2.3 Extraction Plan Team

In accordance with condition C8(a) of SSD 8445, Tahmoor Coal sought the endorsement of qualified and experienced persons to prepare the Extraction Plan from the Planning Secretary. The appointment of

experts was first endorsed in November 2021, and was then reviewed in August 2025. The Director of Resource Assessments (as nominated by the Planning Secretary) endorsed the appointment of the experts listed in **Table 4**.

A copy of the letter of endorsement from DPHI is provided in **Appendix D**.

Table 4 Extraction Plan Team

SSD 8445 Condition	Management Plan and Supporting Documents	Company	Team Member
C8	Extraction Plan Main Document	Tahmoor Coal	Nick Le Baut Natalie Brumby Zina Ainsworth
C8(c)	Graphical Plans	Tahmoor Coal	Justin Smith
C8(e)	Subsidence Predictions and Impact Assessment Report	MSEC	Daryl Kay
C8(g)(i)	Subsidence Monitoring Plan	MSEC	Daryl Kay
C8(g)(ii)	Built Features Management Plan and associated Subsidence Management Plans for individual built features	MSEC	Daryl Kay
C8(g)(iii)	Water Management Plan	HEC / ATC Williams	Anthony Marszalek Camilla West Makaela McGrath
	Supporting surface water documents for the Water Management Plan	HEC / ATC Williams	Anthony Marszalek Camilla West Makaela McGrath
	Supporting groundwater documents for the Water Management Plan	SLR	Sharon Hulbert Raymond Minnaar
C8(g)(v)	Land Management Plan and supporting documents	PSM	Gareth Swarbrick Josselin Ribot
		Douglas Partners	Roderick Haselden Huw Smith Jackson Green
		SLR	Murray Fraser
C8(g)(iv)	Biodiversity Management Plan	Niche Environment and Heritage	Stephen Bloomfield Luke Stone
		Stantec	Dane Fogliada Sean Smith Dan Pygas
C8(g)(vi)	Heritage Management Plan	EMM Consulting	Susan Lampart Anthony Dakhoul Pamela Chauvel Dr Alan Williams
C8(g)(vii)	Public Safety Management Plan	Tahmoor Coal	Nick Le Baut Natalie Brumby

SSD 8445 Condition	Management Plan and Supporting Documents	Company	Team Member
			Zina Ainsworth

3 Extraction Plan Overview

3.1 Extraction Plan Study Area

3.1.1 Definition of Study Area

The Extraction Plan Study Area is defined as the surface area that is likely to be affected by the extraction of LW S1A-S7A from the Bulli Coal Seam. This Study Area has been calculated by combining the areas bound by the following limits:

- The predicted limit of vertical subsidence, taken as the 20 millimetre (mm) subsidence contour resulting from the extraction of LW S1A-S7A; and
- A 35^{o} angle of draw line from the limit of proposed extraction for LW S1A-S7A.

The Study Area is illustrated in **Figure 3**.

An expansion of the Study Area to 600 m from extraction has also been defined by MSEC (2024) (refer to **Figure 3**). Relevant features within this 600 m buffer could be susceptible to far-field or valley related movements have been included for consideration in the Subsidence Predictions and Impact Assessment Reports (MSEC, 2022 and MSEC, 2024) and within this Extraction Plan and associated documents. The 600 m buffer for natural features has been included based on recommendations in the independent inquiry report titled *Impacts of Underground Coal Mining on Natural Features in the Southern Coalfields – Strategic Review* (NSW Department of Planning (DoP), 2008).

3.1.2 Environmental Features in the Study Area

Topography within the Study Area is generally undulating with a fall from the south-west to the north-east. The major topographical feature in and near the Study Area are Teatree Hollow, Hornes Creek and Bargo River valley, the latter which is located to the north of the Study Area.

Teatree Hollow is located directly above the LW S1A to LW S6A, while the tributary of Teatree Hollow (Wirrimbirra Creek) is located directly above the proposed LW S1A to LW S4A. These are located in the catchment of the Hawkesbury-Nepean River.

The Study Area is located predominantly within the Teatree Hollow catchment which is a sub-catchment of the Bargo River. Small portions of the Study Area and 600 m buffer are also located within the Hornes Creek, Dogtrap Creek and Bargo River catchments. The lower reaches of Teatree Hollow, Dogtrap Creek and the Bargo River have, to varying degrees, experienced subsidence-related effects due to historical mining operations at the Tahmoor Mine.

The surface lithology above the LW S1A-S7A generally comprises the Wianamatta Group, with the Hawkesbury Sandstone exposed in the river gorges and creek alignments within the Study Area (MSEC, 2024). The landscape of the Study Area includes a number of steep slopes.

The Study Area is generally cleared for small scale rural production, while native vegetation is present predominantly in the riparian zones and steep slopes of the Study Area.

The Study Area does not include any Drinking Water Catchment Areas, Declared Special Areas, springs, sea, lake, shoreline, natural dams, escarpments, swamps, wetlands or water related ecosystems, National Parks, State Forests, State Conservation Areas, or areas of significant geological interest (MSEC, 2022).

Table 5 provides a summary of the environmental features within the Extraction Plan Study Area and the Key Sub-Plans and associated documents that discuss and manage these features.

Table 5 Environmental and Built Features within the LW S1A-S7A Extraction Plan Area and Management Plans

Feature	Investigation and Assessment	Management and Monitoring
Natural and Aboriginal Heritage Features		
Waterways	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • Water Management Plan (WMP) • Myrtle Creek and Redbank Creek Remediation Progress Review (ATC Williams, 2022)	• WMP • Subsidence Monitoring Plan
Flood-prone land	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • WMP	• WMP • Subsidence Monitoring Plan
Groundwater	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • WMP • Groundwater Technical Report (SLR, 2024) • Baseline Private Bore Assessment Report (SLR, 2022a)	• WMP • Subsidence Monitoring Plan
Steep slopes and cliffs	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • Land Management Plan (LMP) • Detailed Slope Stability Assessment	• LMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Main Southern Railway, Report No. MSEC1201, 2025 (Revision D) • Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to Tahmoor Mine Site, Report No. MSEC1247, 2023 • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Wollondilly Shire Council Infrastructure, Report No. MSEC1193-03, 2025 (Revision D)
Land and soil capability	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • LMP • Geotechnical Assessment (Douglas Partners, 2024) • Geotechnical Assessment (PSM, 2025) • Land and Agricultural Resource Assessment (SLR, 2022b) • Land and Agricultural Resource Assessent (SLR, 2025)	• LMP • Subsidence Monitoring Plan
Aquatic ecology (e.g. threatened or protected species, aquatic habitat)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • Biodiversity Management Plan (BMP)	• BMP • Subsidence Monitoring Plan
Terrestrial ecology (e.g. threatened or protected species, natural vegetation)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BMP	• BMP • Subsidence Monitoring Plan
Aboriginal heritage	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • Heritage Management Plan (HMP)	• HMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to Australian Wildlife Sanctuary, Report No. MSEC1074, 2023 (Revision D)

Feature	Investigation and Assessment	Management and Monitoring
		• Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Wollondilly Shire Council Infrastructure, Report No. MSEC1193-03, 2025 (Revision D) • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Main Southern Railway, Report No. MSEC1201, 2025 (Revision D) Tahmoor Coal – LW S3A-S7A Management Plan for Potential Impacts to Picton Weir, Report No. MSEC1193-12 (Revision C) in April 2025Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to Tahmoor Mine Site, Report No. MSEC1247, 2
Built Features (infrastructure owner in brackets)		
Electrical infrastructure (Endeavour Energy)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • Built Features Management Plan (BFMP)	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Endeavour Energy Infrastructure, Report No. MSEC1193-07, 2025 (Revision C)
Gas infrastructure (Jemena)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Jemena Gas Infrastructure, Report No. MSEC1193-06, 2024 (Revision B), Amendment No. 1 for LW S4A in November 2024
Potable water infrastructure (Sydney Water)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Sydney Water Potable Water Infrastructure, Report No. MSEC1193-04, 202 5 (Revision C)
Sewer infrastructure (Sydney Water)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Sydney Water Sewer Infrastructure, Report No. MSEC1193-05, 2025 (Revision B)
Telecommunications infrastructure (Telstra, NBNCo and TPG)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Telecommunications Management Plan – Tahmoor South Domain – Longwalls South 3A to South 7A - Revision of Telstra, NBN Co and TPG Management Plans for LW S1A-S6A, Tahmoor Coal, June 2024
Main Southern Railway (ARTC)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • HMP • BFMP	• HMP • BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Main Southern Railway, Report No. MSEC1201, 2025 (Revision D) •
Public roads, bridges and culverts (Wollondilly Shire Council)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • HMP • BFMP	• HMP • BFMP • Subsidence Monitoring Plan

Feature	Investigation and Assessment	Management and Monitoring
		• Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Wollondilly Shire Council Infrastructure, Report No. MSEC1193-03, 2025 (Revision D)
Picton Weir (Dams Safety NSW)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • HMP • BFMP	• HMP • BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S3A-S7A Management Plan for Potential Impacts to Picton Weir, Report No. MSEC1193-12 (Revision C) in April 2025
Farm dams (privately owned)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • LMP • BFMP	• LMP • BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Built Structures, Report No. MSEC1193-09, 2025 (Revision C)
Groundwater bores (privately owned)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • WMP • Groundwater Technical Report (SLR, 2024) • Baseline Private Bore Assessment (SLR, 2022a) • BFMP	• WMP • BFMP • Subsidence Monitoring Plan
Permanent survey control marks (Spatial Services)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan
Wellers Road Overbridge (Transport for NSW)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • HMP • BFMP	• Tahmoor Coal – Management Plan for extraction of Tahmoor South LW S4A-S7A adjacent to Wellers Road Overbridge 2025 (Revision B)
Built Features (property / structure owner in brackets)		
Bargo Cemetery (Wollondilly Shire Council)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • HMP • BFMP	• HMP • BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Wollondilly Shire Council Infrastructure, Report No. MSEC1193-03, 2025 (Revision D)
Tahmoor Mine Site (Tahmoor Coal)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • HMP • BFMP	• HMP • BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to Tahmoor Mine Site, Report No. MSEC1247, 2023
Wollondilly Anglican College (Anglican Diocese)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to Wollondilly Anglican College, Report No. MSEC1193-11, 2023

Feature	Investigation and Assessment	Management and Monitoring
Bargo Petroleum and Road Tested Spares (private ownership)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to No. 3030 Remembrance Drive, Bargo Report No. MSEC1193-13, 2023 and Amendment No. 1 for LW S3A in May 2024
Inghams Bargo Breeder Farm (Inghams)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to Inghams Bargo Chicken Breeder Production Complex, 3010 Remembrance Drive, Bargo, Report No. MSEC1193-14, 2023
Inghams Turkey Farm (Inghams)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S5A-S7A Management Plan for Potential Impacts to Inghams Bargo Breeder Turkey Farm, (planned to be complete prior to LW S5A)
Tahmoor Garden Centre (private ownership)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to Tahmoor Garden Centre, Report No. MSEC1193-15, 2023, Amendment No. 1 for LW S3A in May 2024 and Amendment No.2 for LW S4A in November 2024
Australian Wildlife Sanctuary (National Trust)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • HMP • BFMP	• HMP • BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to Australian Wildlife Sanctuary, Report No. MSEC1074, 2023 (Revision E)
MKD Machinery (private ownership)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to MKD Machinery, Report No. MSEC1193-16, 2025 (Revision D)
Pamak Hobbies (private ownership)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Built Structures, Report No. MSEC1193-09, 2025 (Revision C)
Canine Country Club (private ownership)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S6A-S7A Management Plan for Potential Impacts to Canine Country Club, (planned to complete prior to LW S6A)
Bargo Valley Produce (Bargo Valley Product Pty Limited)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S5A-S7A Management Plan for Potential Impacts to Bargo Valley Produce, (planned to complete prior to LW S5A)
Public amenities	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024)	• BFMP • Subsidence Monitoring Plan

Feature	Investigation and Assessment	Management and Monitoring
	• BFMP	• Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Built Structures, Report No. MSEC1193-09, 2025 (Revision C)
Dwellings, driveways, pools, rural structures (privately owned)	• Subsidence Prediction and Impact Assessment Report (MSEC, 2022) • Modification 3 – Longwall S7A (MSEC, 2024) • BFMP	• BFMP • Subsidence Monitoring Plan • Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Built Structures, Report No. MSEC1193-09, 2025 (Revision C)

3.1.3 Land Use and Built Features in the Study Area

The Study Area is located within the Wollondilly Shire Council Local Government Area, and the predominant land uses within the Study Area include rural residential, small-scale cattle and horse grazing. The main agricultural enterprise within or adjacent to the Study Area is poultry farming, and numerous horticultural enterprises (managed by irrigation systems, greenhouses, hothouses and hydroponic systems) are also present in the Study Area (SLR, 2025).

A number of infrastructure are located within the vicinity of the proposed longwalls, including:

- Main Southern Railway, including the Wellers Road Overbridge;
- Public roads, drainage culverts, and bridges;
- Potable water infrastructure;
- Sewer infrastructure;
- Gas infrastructure;
- Electrical infrastructure;
- Telecommunications infrastructure;
- Picton Wier;
- Groundwater bores; and
- Survey control marks.

A number of properties with built features have been identified within the vicinity of the proposed longwalls, including:

- 110 private properties, with a total of 65 houses located directly above the proposed longwalls. These properties include built structures, driveways, pools, septic tanks, farm dams, and water tanks;
- Wollondilly Anglican College (including church, sewerage treatment plant, oval, tennis courts);
- Farm land and facilities (farm buildings and sheds, tanks, gas and fuel storages, poultry sheds, hydroponic systems, irrigation systems, fences, farm dams, bores). This included the businesses Inghams Bargo Breeder Farm, Inghams Turkey Farm, and Bargo Valley Produce;
- Bargo Cemetery;
- Australian Wildlife Sanctuary;
- Tahmoor Mine Site;
- Bargo Petroleum and Road Tested Spares;
- Tahmoor Garden Centre;

- MKD Machinery;
- Pamak Hobbies; and
- Canine Country Club.

The Study Area does not include tunnels, liquid fuel pipelines, air strips, hospitals, shopping centres, community centres, office buildings, swimming pools, bowling greens, racecourses, golf courses, glass houses, factories, buildings equipment or operations that are sensitive to surface movements, surface mining voids or rehabilitation areas, items of architectural significance, retirement or age care villages (MSEC, 2022 and MSEC, 2024).

The Study Area encompasses nine Aboriginal heritage sites and four historical heritage sites (refer to **Figure 11**):

- Aboriginal heritage sites:
  - Isolated find: TC14-2-19 (AHIMS 48-2-0275);
  - Artefact scatter: Remembrance Drive 2013.1 (AHIMS 52-2-3968);
  - Rockshelter with art and stone artefacts: Teatree Hollow 2013.1 (AHIMS 52-2-4471);
  - Rockshelter with deposit and stone artefacts: Hornes Creek RS2 (AHIMS 52-2-4975);
  - Rockshelter with deposit: Hornes Creek RS3 (AHIMS 52-2-4976);
  - Rockshelter with deposit and stone artefact: Hornes Creek RS4 (AHIMS 52-2-4977);
  - Rockshelter: Hornes Creek RS5 (AHIMS 52-2-4978);
  - Rockshelter with deposit and stone artefact: Hornes Creek RS6 (AHIMS 52-2-4982);
  - Rockshelter with deposit: Hornes Creek RS7 (AHIMS 52-2-4981);
- Historical heritage sites:
  - Wirrimbirra Sanctuary (known as the Australian Wildlife Sanctuary) [State Heritage Register (SHR) and Wollondilly local environment plan (WLEP)];
  - Bargo Cemetery (WLEP);
  - Part of the Great Southern Road (non-statutory listed); and
  - Tahmoor Colliery (known as the Tahmoor Mine Site) (non-statutory listed).

One locally listed heritage item, Railway Bridge North (also known as Wellers Road Overbridge), is located within the 600 m buffer from extraction that could be susceptible to far-field or valley related movements. In addition, three heritage items, AHIMS #52-2-4980 (Hornes Creek GG1), Picton Weir (WLEP) and Bargo Railway Viaduct (WLEP and SHR), are outside the 600 m buffer but could also be susceptible to far-field or valley related movements.

Table 5 provides a summary of the built features within the Extraction Plan Study Area and the Key Sub-plans and associated documents that discuss and manage these features.

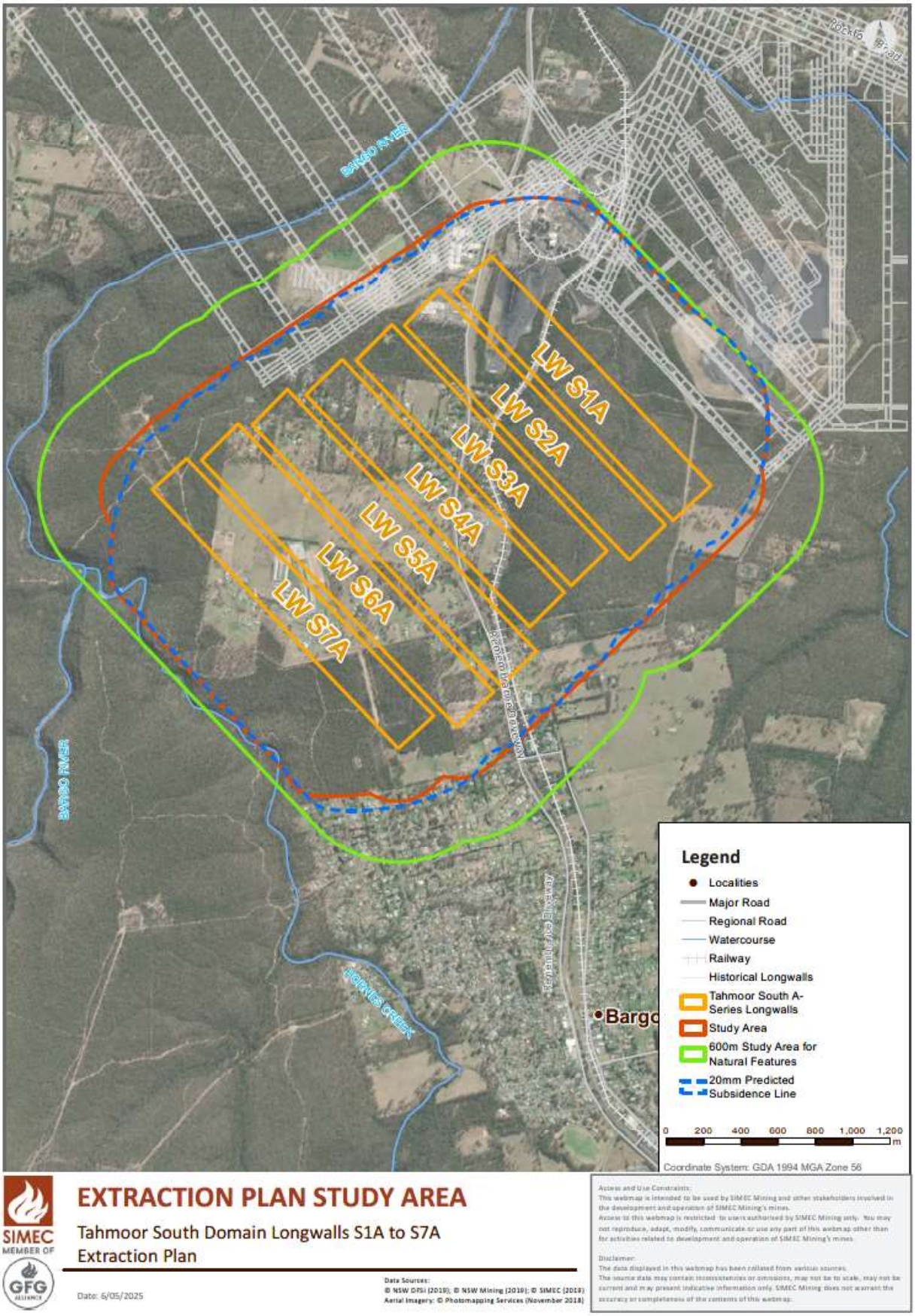

Figure 3 **Extraction Plan Study Area**

3.2 Approvals and Licensing Requirements

Tahmoor Coal's operations are conducted in accordance with applicable Commonwealth and State environmental, planning, mining safety, and natural resource legislation. A register of relevant environmental legislative and regulatory requirements (including development consents, leases, licences, and other relevant approvals) is maintained by Tahmoor Coal in a compliance database.

Tahmoor Mine currently operates under a number of approvals, including:

- Development Consent (7105/47) granted in 1975 by Wollondilly Shire Council for the development of a mine and associated mine infrastructure;
- Development Consent (76/20188) granted in 1979 by NSW Planning and Environment Commission (and subsequent minor modifications approved by NSW Planning and Environment Commission and NSW Department of Planning) for a CHPP and reject emplacement, coal transportation, upgrade of surface facilities for longwall mining, and extension of the CHPP.
- Development Consent (190/85) granted in 1985 by Wollondilly Shire Council for surface civil and mechanical work for gas extraction;
- Development Consent (DA 57/93) (and subsequent minor modification) granted by the Land and Environment Court in 1994 for an expansion of underground coal mining into the Tahmoor North area, continued operation of the existing Tahmoor Mine surface facilities including the coal preparation plant and the reject emplacement area;
- Development Consent (DA 67/98) (and subsequent minor modification) granted by the Minister for Urban Affairs and Planning in 1999 for the expansion of underground mining into those areas of Tahmoor North in which mining was classified as prohibited development;
- Development Consent (SSD 8445) granted in 2021 by DPIE for the Tahmoor South Project, including the extraction of up to 4 Mtpa of ROM coal, with a total of up to around 35 Mt of ROM coal proposed to be extracted over a 10-year period. SSD 8445 has been modified on three occasions relating to:
    i. Modification 1 - Extension of time to commission the Tahmoor Coal Water Treatment Plant, approved on 19 July 2022; and
    ii. Modification 2 - Underground brine disposal and transfer of mine water, approved on 13 June 2023;
    iii. Modification 3 – Inclusion of an additional longwall panel (Longwall South 7A (LW S7A)) to the existing approved mine plan as approved on 26 May 2025.
- Approval (EPBC 2017/8084) granted in 2021 by the then Department of Agriculture, Water and the Environment (DAWE) (now Department of Climate Change, Energy, the Environment and Water (Commonwealth DCCEEW)) for the Tahmoor South Project under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act);
- CCL 716, CCL 747, ML 1376, ML 1308, ML 1539, and ML 1642;
- Tahmoor Rehabilitation Management Plan (RMP); and
- Environmental Protection Licence (EPL) 1389 under the *Protection of the Environment Operations Act 1997*.

It is noted that development consents 7105/47, 76/20188, 190/85 and 57/93 will be surrendered in accordance with Consent A21 (SSD 8445) following the completion of current mining activities and mine closure/rehabilitation activities required by these consents.

These approvals constitute Tahmoor Coal's licences to conduct underground mining operations by longwall and bord and pillar mining methods within the Bulli Coal Seam.

Applicable conditions relevant to the extraction of LW S1A-S7A from development consent SSD 8445, EPBC 2017/8084, Leases CCL 716 and CCL 747, EPL 1389 and relevant Work Health and Safety Legislation (WHS Legislation) are outlined in the following sections. Each sub-plan management plan prepared in support of the Extraction Plan also includes these details as well as where each plan addresses the DPE Extraction Plan Guidelines (NSW Department of Planning & Environment, 2022) and WHS Legislation.

Statutory approvals areas and mining tenement boundaries applicable to the LW S1A-S7A Extraction Plan Study Area are detailed on **Figure 2** and Graphical Plan 5.

3.2.1 Project Approval

3.2.1.1 Development Consent Conditions for Extraction Plan

LW S1A-S7A will be extracted in the Tahmoor South mining area in accordance with Development Consent SSD 8445. SSD 8445 provides the conditional planning approval framework for mining activities in the Tahmoor South Domain to be addressed within an Extraction Plan and supporting management plans. Conditions relevant to this management plan from SSD 8445 are detailed in **Table 6**.

Table 6 SSD 8445 Condition Requirements for Extraction Plans

<table>
<tr><th>Condition Reference</th><th>Condition Requirement</th><th>Tahmoor Coal Response / Section Addressed</th></tr>
<tr><td>C1</td><td>SUBSIDENCE
Performance Measures – Natural and Heritage Features etc.
The Applicant must ensure that the development does not cause any exceedances of the performance measures in Table 7.</td><td rowspan="2">Section 3.4.2, Section 3.5, Section 3.6, Section 4, Section 5
Appendix C – Master TARP
Key Sub-plans and Supporting Documents</td></tr>
<tr><td>Excerpt from Table 7</td><td>Table 7: Subsidence impact performance measures - natural and heritage features etc
<table>
<tr><th>Feature</th><th>Performance Measures</th></tr>
<tr><td colspan="2">Water Resources</td></tr>
<tr><td>All watercourses within the Subsidence Area</td><td>- No greater subsidence impact or environmental consequences to water quality, water flows (including baseflow) or stream health (including riparian vegetation), than predicted in the EIS</td></tr>
<tr><td>Other watercourses</td><td>- Negligible environmental consequences including beyond those predicted in the EIS, including:
- negligible diversion of flows or changes in the natural drainage behaviour of pools;
- negligible decline in baseline channel stability;
- negligible gas releases and iron staining; and
- negligible increase in water turbidity</td></tr>
<tr><td>GDEs including Thirlmere Lakes</td><td>- Negligible impacts including:
- negligible change in groundwater levels; and
- negligible change in groundwater quality.</td></tr>
<tr><td colspan="2">Land</td></tr>
<tr><td>Any cliff located directly above longwalls</td><td>- Minor environmental consequences (that is occasional rockwalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 5% of the total face area of the cliff within any longwall mining domain)</td></tr>
<tr><td>Any cliff within Subsidence Area beyond the extent of longwalls</td><td>- Negligible environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 0.5% of the total face area of such cliffs within Subsidence Area)</td></tr>
<tr><td>All land within the Subsidence Area</td><td>- No greater subsidence impacts or environmental consequences than predicted in the EIS</td></tr>
<tr><td>All land outside the Subsidence Area</td><td>- Negligible subsidence impacts or environmental consequences</td></tr>
<tr><td colspan="2">Biodiversity</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Condition Reference</th><th>Condition Requirement</th><th>Tahmoor Coal Response / Section Addressed</th></tr>
<tr><td></td><td>
<table>
<tr><td>Threatened species, threatened populations, or endangered ecological communities</td><td>- No greater subsidence impacts or environmental consequences than predicted in the EIS
- Negligible impacts on threatened species, populations or communities due to remediation of subsidence cracking</td></tr>
<tr><td>Aquatic habitat</td><td>- Negligible environmental consequences to aquatic and riparian ecosystems beyond those predicted in the EIS</td></tr>
<tr><td colspan="2">Heritage</td></tr>
<tr><td>Aboriginal cultural heritage sites listed in Appendix 4</td><td>- No greater subsidence impacts or loss of heritage values than predicted in the EIS</td></tr>
<tr><td>Historic heritage sites listed in Appendix 4</td><td>- No greater subsidence impacts or loss of heritage values than predicted in the EIS</td></tr>
<tr><td colspan="2">Mine workings</td></tr>
<tr><td>First workings</td><td>- To remain long term stable and non-subsiding</td></tr>
<tr><td>Second workings</td><td>- To be carried out only within the approved mine plan, in accordance with an approved Extraction Plan</td></tr>
</table>
Notes for Table 7 (C1):
Notes:
• These performance measures apply to all mining taking place after the date of this consent.
• The Applicant is required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this consent (see condition C8).
</td><td></td></tr>
<tr><td>C2</td><td>Performance Measures – Natural and Heritage Features etc.
Measurement and monitoring of compliance with performance measures and performance indicators in this consent is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans and monitoring programs. In the event of a dispute over the appropriateness of proposed methods, the Planning Secretary will be the final arbiter.</td><td>Section 2.2.3, Section 3.6, Section 5
Appendix C – Master TARP
Key Sub-plans and Supporting Documents</td></tr>
</table>

<table>
<tr><th>Condition Reference</th><th>Condition Requirement</th><th>Tahmoor Coal Response / Section Addressed</th></tr>
<tr><td>C5</td><td>Performance Measures - Built Features
The Applicant must ensure that the development meets the performance measures in Table 8.
Table 8: Subsidence impact performance measures – built features
<table>
<tr><th>Feature</th><th>Performance Measures</th></tr>
<tr><td colspan="2">Public Infrastructure</td></tr>
<tr><td>Key public infrastructure:
• Main Southern Railway
• Remembrance Drive
• M31 Motorway
• Moomba to Sydney Gas Pipeline
• Gorodok Ethane Pipeline
• Bargo Waste Management Centre</td><td>- Always safe and serviceable
- Damage that does not affect safety or serviceability must be fully repairable, and must be fully investigated and repaired at the cost of the Applicant</td></tr>
<tr><td>• All other public infrastructure including roads, culverts, bridges, viaducts, water supply pipelines, sewerage mains, gas pipelines, electrical and telecommunication infrastructure and survey control marks</td><td>- Always safe
- Serviceability should be maintained wherever practicable
- Loss of serviceability must be fully compensated
- Damage must be fully repairable, and must be fully investigated and repaired or else replaced or fully compensated at the cost of the Applicant</td></tr>
<tr><td colspan="2">Other Built Features</td></tr>
<tr><td>• Public amenities including schools, churches and community centres
• Industrial, commercial and business premises
• Bargo Cemetery
• Wirrimbirra Sanctuary
• Privately-owned residences
• Other privately-owned built features and improvements, including petrol stations, sheds, garages, farm dams, tanks, swimming pools, tennis courts, roads, tracks and fences</td><td>- Always safe
- Serviceability should be maintained wherever practicable
- Loss of serviceability must be fully compensated
- Damage must be fully repairable, and must be fully investigated and repaired or else replaced or fully compensated at the cost of the Applicant</td></tr>
<tr><td colspan="2">Public Safety</td></tr>
<tr><td>- Public safety</td><td>- Negligible additional risk</td></tr>
</table>
Notes for Table 8 (C5)
Notes:
• These performance measures apply to all mining taking place after the date of this consent.
• The Applicant is required to define more detailed performance measures in the Built Features Management Plans or Public Safety Management Plan (see condition C8).
• Requirements regarding safety or serviceability do not prevent preventative or mitigatory actions being taken prior to or during mining.
• Requirements under this condition may be met by measures undertaken in undertaken in accordance with the Coal Mine Subsidence Compensation Act 2017.</td><td>Section 3.5, Section 3.6, Section 5
Appendix C – Master TARP
Key Sub-plans and Supporting Documents</td></tr>
<tr><td>C6</td><td>Performance Measures - Built Features
Any dispute between the Applicant and the owner of any built feature over the interpretation, application or implementation of the performance measures in Table 8 is to be settled by the Planning Secretary, following consultation with the Resources Regulator. Any decision by the Planning Secretary shall be final.</td><td>Noted.</td></tr>
<tr><td>C8</td><td>Extraction Plan
The Applicant must prepare an Extraction Plan for all second workings on the site of the development to the satisfaction of the Planning Secretary. Each Extraction Plan must:</td><td>This document.</td></tr>
<tr><td>C8(a)</td><td>Be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary;</td><td>Section 2.3
Appendix D – Consultation for evidence of endorsement</td></tr>
<tr><td>C8(b)</td><td>Be prepared in consultation with the Resources Regulator, DPE Water and Subsidence Advisory NSW;</td><td>Section 2.1, Section 2.2
Appendix D – Consultation for evidence of endorsement</td></tr>
<tr><td>C8(c)</td><td>Include detailed plans of existing and proposed first and second workings and overlying surface features, including any applicable adaptive management measures;</td><td>Section 6
Graphical Plans</td></tr>
</table>

Condition Reference	Condition Requirement	Tahmoor Coal Response / Section Addressed
C8(d)	Include adequate consideration of mine roof and floor conditions which has been undertaken in consultation with the Resources Regulator;	**Section 2.1.3, Section 3.3.4, Section 3.4.2**
C8(e)	provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed mining covered by the Extraction Plan, incorporating any relevant information obtained since this consent;	**Section 3.4** **Appendix A** – Subsidence Prediction and Impact Assessment Report
C8(f)	describe in detail the performance indicators to be implemented to ensure compliance with the performance measures in Table 7 and Table 8, and manage or remediate any impacts and/or environmental consequences to meet the rehabilitation objectives in condition B56;	**Section 3.4.2, Section 3.5, Section 3.6, Section 5** **Appendix C** – Master TARP Key Sub-plans and Supporting Documents
C8(g)	Including a:	See below
C8(g)(i)	Subsidence Monitoring Plan which has been prepared in consultation with the Resources Regulator to:	**Section 5** Subsidence Monitoring Plan
	• describe the ongoing conventional and non-conventional Subsidence Monitoring Plan;	
	• provide data to assist with the management of risks associated with conventional and non-conventional subsidence;	
	• validate the conventional and non-conventional subsidence predictions;	
	• analyse the relationship between the predicted and resulting conventional and non-conventional subsidence effects and predicted and resulting impacts under the plan and any ensuing environmental consequences; and	
	• inform the adaptive management process;	
C8(g)(ii)	Built Features Management Plan which has been prepared in consultation with the Resources Regulator, to manage the potential subsidence impacts of the proposed underground workings on built features, and which:	**Section 4.6** Built Features Management Plan Subsidence Management Plans for built features
	• has also been prepared in consultation with: - the owners of potentially affected features; - the Technical Committee required under condition C14; - the EPA in relation to the Bargo Waste Management Centre; and - the NSW Department regulating the Pipelines Act 1967 in relation to the licensed gas pipelines;	
	• addresses in appropriate detail all items of key public infrastructure (with particular consideration of public roads and rail lines, including any associates bridges and culverts, gas pipelines and waste facilities), other public infrastructure and all classes of other built features;	
	• recommends appropriate pre-mining mitigation measures to reduce subsidence impacts;	
	• recommends appropriate remedial measures and includes commitments to mitigate, repair, replace or compensate predicted impacts on potentially affected built features in a timely manner; and	
	• in the case of all key public infrastructure, and other public infrastructure except roads, trails and associated structures, reports external auditing for compliance with ISO 31000 (or an alternative standard agreed with the infrastructure owner), and provides for annual auditing of compliance and effectiveness during extraction which may impact the infrastructure;	
C8(g)(iii)	Water Management Plan which has been prepared in consultation with DPE Water and BCD and is consistent with the Water Management Plan required under condition B34, which provides for the management of potential impacts and environmental consequences of the proposed underground workings on watercourses and aquifers, including:	**Section 4.2** Water Management Plan
	• detailed baseline data on: - surface water flows, quality and geomorphic conditions of watercourses and/or water bodies that could be affected by subsidence; and - groundwater levels, yield and quality in the region, including for privately-owned licensed bores;	
	• detailed surface and groundwater impact assessment criteria, including specific trigger levels for: - investigating any potentially adverse impacts on water resources or water quality; - active remediation of geomorphic and erosional impacts (including supporting justification for the selected triggers); and	

Condition Reference	Condition Requirement	Tahmoor Coal Response / Section Addressed
	- providing compensatory water supply to affected water users under condition B26 of this Schedule;	
	• a surface water monitoring program to monitor and report on: - stream flows and quality; - stream and riparian vegetation; - channel and bank stability; and - the effectiveness of remediation measures in controlling geomorphic and erosional impacts;	
	• a groundwater monitoring program to monitor and report on: - groundwater inflows to the underground mining operations; - the height of groundwater depressurisation; - height of fracturing above indicative longwall panels following mining; - background changes in groundwater yield/quality against mine-induced changes, in particular, on privately-owned groundwater bores in the vicinity of the site; - permeability, hydraulic gradient, flow direction and connectivity of the deep and shallow groundwater aquifers; and - impacts of the development on GDEs (including Thirlmere Lakes);	
	• a description of any adaptive management practices implemented to guide future mining activities in the event of greater than predicted impacts on aquatic habitat;	
	• a program to validate the surface water and groundwater models for the development and compare monitoring results with modelled predictions; and	
	• a plan to respond to any exceedances of the surface water and groundwater assessment criteria, including a Watercourse Corrective Action Management Plan as detailed in Condition C12.	
C8(g)(iv)	Biodiversity Management Plan which is consistent with the Biodiversity Management Plan required under condition B38:	**Section 4.4** Biodiversity Management Plan
	• has been prepared in consultation with BCD;	
	• establishes baseline data for existing habitat within the subsidence area, including water table depth, vegetation condition, stream morphology, key fish habitat and threatened species habitat; and	
	• provides for the adaptive management of potential impacts and environmental consequences of the proposed second workings on aquatic and terrestrial flora and fauna, with a specific focus on threatened species, populations and their habitats, EECs/CEECs and water dependent ecosystems;	
C8(g)(v)	Land Management Plan which:	**Section 4.3** Land Management Plan
	• has been prepared in consultation with any affected public authorities;	
	• provides for the management of potential impacts and/or environmental consequences of the proposed underground workings on land in general, with a specific focus on steep slopes; and	
	• is informed by a detailed slope stability assessment prepared by a suitably qualified and experienced person/s;	
C8(g)(vi)	Heritage Management Plan which is consistent with the requirements of conditions B42 to B47:	**Section 4.5** Heritage Management Plan
	• has been prepared in consultation with Heritage NSW, Council and relevant stakeholders for both Aboriginal heritage and non-Aboriginal heritage items;	
	• includes a pre-mining assessment of the condition and structure of local and State significant heritage items within the subsidence area;	
	• describes the measures to be implemented to: - protect, monitor and manage potential environmental consequences of the proposed second workings on identified Aboriginal objects and Aboriginal places and local and State significant heritage items, in accordance with the commitments made in the EIS; - manage the discovery of suspected human remains and any new Aboriginal objects or Aboriginal places, including provisions for burials, over the life of the development; - ensure compliance with the requirements under conditions B41 to B46 inclusive and the subsidence impact performance measures in Table 7; and - facilitate ongoing consultation and involvement of Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage sites within the subsidence area;	
C8(g)(vii)	Public Safety Management Plan which has been prepared in consultation with the Resources Regulator, which ensures public safety and manages access on the site;	**Section 4.7** Public Safety Management Plan

Condition Reference	Condition Requirement	Tahmoor Coal Response / Section Addressed
C8(g)(viii)	Trigger Action Response Plans addressing all features in Table 7 and Table 8, which contain:	**Section 3.6.2** Appendix C – Master TARP
	• appropriate triggers to warn of increased risk of exceedance of any performance measure;	**Section 3.6.2** Appendix C – Master TARP
	• specific actions to respond to high risk of exceedance of any performance measure to ensure that the measure is not exceeded;	**Section 3.6.3** Appendix C – Master TARP
	• an assessment of remediation measures that may be required if exceedances occur and the capacity to implement the measures; and	**Section 3.6.3**
	• adaptive management where monitoring indicates that there has been an exceedance of any performance measures in Table 7 and/or Table 8, or where any such exceedance appears likely; and	**Section 3.6.4**
C8(g)(ix)	Contingency Plan that expressly provides for:	**Section 3.6.3** Appendix C – Master TARP
	• adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Table 7 and/or Table 8, or where any such exceedance appears likely;	**Section 3.6.4**
	• an assessment of remediation measures that may be required if exceedances occur and the capacity to implement those measures;	**Section 3.6.3**
C8(h)	Propose appropriate revisions to the Rehabilitation Management Plan required under Condition B60; and	The Rehabilitation Management Plan, as required under Condition B60, was approved after the approval of this Extraction Plan. The plan will be revised every 3 years unless site conditions changes.
C8(i)	include a program to collect sufficient baseline data for future Extraction Plans.	**Section 5.4** Subsidence Monitoring Plan
C9	The Applicant must not undertake second workings until the relevant Extraction Plan is approved by the Planning Secretary.	Noted.
C10	The Applicant must implement the Extraction Plan as approved by the Planning Secretary.	Noted.
C11	**Payment of Reasonable Costs** The Applicant must pay all reasonable costs incurred by the Department to engage a suitably qualified, experienced and independent person/s to review the adequacy of any aspect of an Extraction Plan.	Noted.

3.2.1.2 Additional Consent Conditions Relevant to Extraction Plan

In addition to the requirements in SSD 8445 specific to the preparation of this Extraction Plan, **Table 7** provides a summary of additional requirements listed in SSD 8445 that are applicable to this Extraction Plan.

It is noted that, while DA 1975 (7105/47) is applicable to the first portion of first workings (refer to response to Condition C7 in the table below), there are no conditions from DA 1975 that are relevant to this Extraction Plan. In addition, DA 1975 will be surrendered in accordance with Consent A21 (SSD 8445) following the completion of current mining activities and mine closure/rehabilitation activities required by these consents.

Table 7 Additional Development Consent Requirements for this Extraction Plan

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
SSD 8445		
A1	**Obligation to minimise harm to the environment** In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of this development, and any rehabilitation required under this consent.	**Section 3.6** The management measures discussed in this Extraction Plan have been proposed to meet the requirements of this condition.
A2	**Terms of consent** The development may only be carried out: (a) in compliance with conditions of this consent; (b) in accordance with all written directions of the Planning Secretary; (c) generally in accordance with the EIS; and (d) generally in accordance with the Development Layout in Appendix 2.	**Section 3.2.1** This Extraction Plan has been developed in compliance with the listed conditions and commitments as discussed in Condition A2, which is required in Condition E5.
A5	**Mining operations** First workings and second workings may only be carried out within the area covered by the approved mine plan, subject to Condition A7 requiring shortening of Longwall S3B (LW S3B) and Longwall S4B (LW S4B).	**Appendix A** – Subsidence Predictions and Impact Assessment shows the 'Extent of Longwalls' as defined in the Tahmoor South Project EIS, and illustrates that the proposed longwalls are within this area. LW S3B and LW S4B are not relevant to this Extraction plan.
A19	**Mining operations** The proposed downcast ventilation shaft TSC2 must be constructed on the same site as TSC1. Disturbance must not occur at the proposed TSC2 site. Construction of shafts TSC1 and TSC2 must not be commenced until a revised layout and design has been submitted to and approved by the Planning Secretary. This Condition does not remove the need for the Applicant to pursue micro-siting of surface infrastructure to avoid biodiversity impacts as required under condition B38(e)(i).	**Section 7.8** The construction of TSC1 and TSC2 ventilation shafts is no longer planned.
A25	**Community Consultative Committee** Within three months of the commencement of the development, a Community Consultative Committee (CCC) must be established for the development in accordance with the Department's Community Consultative Committee Guidelines: State Significant Projects (2019). The CCC must meet at a minimum frequency of once every six months. The CCC must continue to operate during the life of the development, or other timeframe agreed by the Planning Secretary. The Committee must comprise an independent chair and appropriate representation from the Applicant, Council, affected stakeholder groups and the local community.	**Section 2.1, Section 2.1.3** The TCCCC was established in 2003 in response to the requirement for DA 67/98 Condition 47 to establish and operate a Community Consultative Committee in general accordance with DPE Community Consultative Committee Guidelines: State Significant Projects (2016). DPE (now NSW DPHI) have approved the existing TCCCC as meeting the requirements for this condition. This Extraction Plan has been discussed at recent TCCCC meetings.

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
A36	**Compliance** The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.	**Section 7.9.1** Tahmoor Coal provides Environmental Awareness Training for all on-site employees on an annual basis. This training includes information on all relevant environmental aspects, including relevant information included in this Extraction Plan.
A39	**Crown Land** The Applicant must consult with DPE Crown Lands prior to undertaking any development on Crown Land or Crown Roads. Notes: • Under section 265 of the Mining Act 1992, the Applicant is required to enter into a compensation agreement with DPE Crown Lands prior to undertaking any mining operations or related activities on Crown land or Crown roads within a mining lease. • Under section 141 of the Mining Act 1992, the Applicant is required to enter into an access arrangement with DPE Crown Lands prior to undertaking any prospecting operations on Crown land or Crown roads within an exploration licence.	**Section 2.1.3** Tahmoor Coal is in consultation with Crown Land and is seeking to enter into a compensation agreement.
B25	Prior to the commencement of second workings under this consent, the Applicant must complete a bore census for all licensed privately-owned groundwater bores that are predicted to have a drawdown of greater than 2 metres as a result of the development providing: (a) notification of bore owners, including an indication of the level of risk of impact to their water supply; (b) ongoing engagement and consultation with bore owners in accordance with the Make Good Strategy contained in the EIS; (c) detailed baseline data regarding groundwater levels, yield and quality for privately-owned groundwater bores; and (d) a condition assessment of existing groundwater bores and monitoring equipment; to the satisfaction of the Planning Secretary.	A Baseline Private Bore Assessment Report is included as an appendix to the Water Management Plan, and includes a review of all licensed privately-owned groundwater bores that are predicted to have a drawdown of greater than 2 metres by the proposed development.
B26	**Compensatory Water Supply** The Applicant must provide a compensatory water supply to any landowner of privately-owned land whose rightful water supply is adversely and directly impacted (other than an impact that is minor or negligible) as a result of the development, in consultation with NRAR and DPE Water, and to the satisfaction of the Planning Secretary	Water Management Plan includes the compensation management plan to be implemented if water supply is impacted by the extraction of LW S1A-S7A.
B27	The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent, in quality and volume, to the loss attributable to the development. Equivalent water supply should be provided (at least on an interim basis) as soon as practicable after the loss is identified, unless otherwise agreed with the landowner. The burden of proof that any loss of water supply is not due to mining impacts rests with the Applicant.	Water Management Plan includes the compensation management plan to be implemented if water supply is impacted by the extraction of LW S1A-S7A.
B34	**Water Management Plan** Prior to the commencement of construction activities, the Applicant must prepare a Water Management Plan for the development to the satisfaction of the Planning Secretary. (Refer to the SSD 8445 Consent Conditions for full condition)	A Water Management Plan for the Tahmoor South Project has been approved by DPE (now NSW DPHI). Relevant sections from this management plan have been included in the LW S1A-S7A Water Management Plan.
B38	**Biodiversity Management Plan** The Applicant must prepare a Biodiversity Management Plan for all areas of the development to the satisfaction of the Planning Secretary. (Refer to the SSD 8445 Consent Conditions for full condition)	A Biodiversity Management Plan for the Tahmoor South Project has been approved by DPE (now NSW DPHI). Relevant sections from this management plan have been included in the LW S1A-S7A Biodiversity Management Plan.
B41	**Heritage** The Applicant must ensure that the development does not cause any direct or indirect impact on any identified heritage item, beyond those predicted in the EIS. Note: Identified heritage items are listed in Appendix 4.	The Heritage Management Plan includes management measures to address this condition.

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
B42	**Protection of Aboriginal Heritage** If any previously unknown Aboriginal object is discovered on the site, or suspected to be on the site: (a) all work in the immediate vicinity of the object or place must cease immediately; (b) a 10 m buffer area around the object or place must be cordoned off; and (c) Heritage NSW must be contacted immediately.	Managements measures have been included in the Heritage Management Plan if potential or actual archaeological objects or sites are identified.
B43	**Protection of Aboriginal Heritage** Work in the immediate vicinity may only recommence if: (a) the potential Aboriginal object is confirmed by Heritage NSW, in consultation with the Registered Aboriginal Parties, not to be an Aboriginal object or Aboriginal place; or (b) the Planning Secretary is satisfied with the measures to be implemented in respect of the Aboriginal object and makes a written direction in that regard.	Managements measures have been included in the Heritage Management Plan if potential or actual archaeological objects or sites are identified.
B44	**Protection of Aboriginal Heritage** If suspected human remains are discovered on the site, then all work surrounding the area must cease, and the area must be secured. The Applicant must immediately notify NSW Police Force and Heritage NSW, and work must not recommence in the area until authorised by NSW Police Force and Heritage NSW.	Managements measures have been included in the Heritage Management Plan if potential or actual archaeological objects or sites are identified.
B45	**Protection of Aboriginal Heritage** The Applicant must ensure that all known Aboriginal objects or Aboriginal places on the site and within any offset areas are properly recorded, and those records are kept up to date, in the Aboriginal Heritage Information Management System (AHIMS) Register.	The Heritage Management Plan includes management measures to address this condition.
B46	**Protection of Historic Cultural Heritage** The Applicant must not commence second workings until the Historic Heritage Plan required under condition C8 is approved by the Planning Secretary. The Applicant must implement the Historic Heritage Plan as approved by the Planning Secretary.	Noted. The Heritage Management Plan is included as part of this Extraction Plan application, in accordance with condition C8.
B47	**Visual Amenity and Lighting** The Applicant must: • Take all reasonable steps to minimise the visual and off-site lighting impacts of the development; • take all reasonable steps to shield views of mining operations and associated equipment from users of public roads and privately-owned residences; • ensure no fixed outdoor lights shine directly above the horizontal or above the building line or any illuminated structure; • ensure mobile lighting rigs do not shine directly above the horizontal (except where required for emergency safety purposes); • ensure that all external lighting associated with the development complies with relevant Australian Standards including the latest version of Australian Standard AS4282 (INT) 2019 - Control of Obtrusive Effects of Outdoor Lighting; and • ensure that the visual appearance of any new buildings, structures, facilities or works (including paint colours and specifications) is aimed at blending as far as possible with the surrounding landscape.	Considered in each individual Construction Environmental Management Plan for surface construction works. This condition is not relevant to the Heritage Management Plan (as indicated in Condition C8(g)(vi)) as the extraction of LW S1A-S7A does not include any of these surface construction works.
B56	**Rehabilitation Objectives** The Applicant must rehabilitate the site in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992. This rehabilitation must be generally consistent with the proposed rehabilitation activities described in the EIS (and shown conceptually in the Rehabilitation Plan in Appendix 5), and must comply with the objectives in Table 6. Table 6: Rehabilitation Objectives Feature: Community Objective: • Ensure public safety • Minimise adverse socio-economic effects associated with mine closure	The rehabilitation objectives of this condition are required to be met in Condition C8(f). **Section 3.4.2, Section 3.5, Section 3.6, Section 5** **Appendix C** – Master TARP Key Sub-Plans and Supporting Documents
B60	**Rehabilitation Management Plan** The Applicant must prepare a Rehabilitation Management Plan for the development, in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992. (Refer to the SSD 8445 Consent Conditions for full condition)	The Rehabilitation Management Plan as specified in this condition is required to be revised to be met in Condition C8(h).

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
		The Rehabilitation Management Plan, as required under Condition B60, was approved after the approval of this Extraction Plan. The plan will be revised every 3 years unless site conditions changes.
C3	**Additional Offsets** If the Applicant exceeds the performance measures in Table 7 and the Planning Secretary determines that: • it is not reasonable or feasible to remediate the subsidence impact or environmental consequences; or • remediation measures implemented by the Applicant have failed to satisfactorily remediate the subsidence impact or environmental consequence, then the Applicant must provide an offset to compensate for the subsidence impact or environmental consequence, that is proportionate to the significance of the subsidence impact or environmental consequence, following consultation with BCD and/or Heritage NSW and to the satisfaction of the Planning Secretary.	Noted. Performance measures in Table 7 of SSD 8445 are not anticipated to be exceeded.
C4	The offset required under condition C3 must give priority to like-for-like physical environmental offsets, but may also consider other offsets under the Biodiversity Offsets Scheme of the BC Act, such as the Biodiversity Conservation Fund established by BCT, or funding or implementing supplementary measures, such as: • actions outlined in threatened species recovery programs; • actions that contribute to threat abatement programs; • biodiversity research and survey programs; and/or • rehabilitating degraded habitat.	Noted. Performance measures in Table 7 of SSD 8445 are not anticipated to be exceeded.
C7	**First Workings** The Applicant may carry out first workings within the area of the approved mine plan, other than in accordance with an approved Extraction Plan, provided that the Resources Regulator is satisfied that the first workings are designed to remain stable and non-subsiding in the long term, and do not generate more than 20 mm of vertical subsidence, except insofar as they may be impacted by approved second workings. Note: The intent of this condition is to ensure that first workings are built to geotechnical and engineering standards sufficient to ensure long term stability, with negligible direct subsidence impacts.	**Section 3.4.2** First workings for LW S1A remain within the Tahmoor North Lease, for which DA 1975 (applies. Under this development consent there are no requirements for first workings notifications. Requirements for first workings notifications under the Tahmoor South development consent commenced when LW S1A extraction starts. A letter was sent to the Resources Regulator prior to this commencement with information on the first workings as required under this condition.
C12	**Watercourse Corrective Action Management Plan(s)** The Applicant must prepare a Watercourse Corrective Action Management Plan(s) for watercourses damaged by subsidence impacts associated by the development, to the satisfaction of the Planning Secretary. (Refer to the SSD 8445 Consent Conditions for full condition)	In accordance with Condition C8(g)(iii), the Water Management Plan will include a plan to respond to any exceedances of the surface water and groundwater assessment criteria, in the event that exceedances occur. This includes references to Watercourse Corrective Action Management Plan(s), if required.
C14	**Technical Committee for the Bargo Waste Management Centre** Prior to commencing second workings, the Applicant must establish a Technical Committee for the Bargo Waste Management Centre, comprising engineering and geotechnical specialists and a representative of Council, whose appointment has been endorsed by the Planning Secretary; the Applicant and Council. The Technical Committee must continue to operate during the life of the development, or other timeframe agreed by the Planning Secretary. The role of the Technical Committee is to: (a) provide input into the preparation and implementation of the Built Features Management Plan;	Consultation with this technical committee is required under Condition C8(g)(ii). However, the Bargo Waste Management Centre is not included in the Study Area. A Technical Committee for the Bargo Waste Management Centre was established prior to

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
	(b) consult with relevant statutory agencies, including the EPA and Subsidence Advisory NSW; (c) identify all potential mechanisms for impacts of the development on the Bargo Waste Management Centre, including from non-conventional subsidence; (d) undertake a risk assessment to identify the level of subsidence induced risks; (e) recommend appropriate pre-mining mitigation measures required to reduce subsidence impacts; (f) recommend appropriate remedial measures and measures to investigate, mitigate, repair, replace or compensate predicted impacts and associated cost sharing responsibilities; and (g) recommend monitoring programs, trigger action response plan(s) and communication plans, to ensure the development meets the performance measures in Table 8. Note: • Technical Committees may also be established for other public infrastructure assets listed in Table 8.	the commencement of second workings.
E4	**Adaptive Management** The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and performance measures in this consent. Any exceedance of these criteria or performance measures constitutes a breach of this consent and may be subject to offset or other provisions as specified in this consent and/or penalty or offence provisions under the EP&A Act or EP&A Regulation. Where any exceedance of these criteria or performance measures has occurred, the Applicant must, at the earliest opportunity: (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; (c) within 14 days of the exceedance occurring (or other timeframe agreed by the Planning Secretary), submit a report to the Planning Secretary describing these remediation options and any preferred remediation measures or other course of action; and (d) implement reasonable remediation measures as directed by the Planning Secretary.	**Section 3.6, Section 7.4**
E5	**Management Plan Requirements** Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	This main document and all management plans under this Extraction Plan have been prepared in accordance with this condition.
	(a) a summary of relevant background or baseline data;	**Section 2.2, Section 3.1** Key Sub-Sub-plans and Supporting Documents
	(b) details of:	NA
	(b)(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);	**Section 3.2** KeySub-Sub-plans and Supporting Documents
	(b)(ii) any relevant limits or performance measures and criteria; and	**Section 3.5.1** Key Sub-Sub-plans and Supporting Documents
	(b)(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	**Section 3.5.2** Key Sub-Sub-plans and Supporting Documents
	(c) any relevant commitments or recommendations identified in the document/s listed in condition A2(c);	**Section 3.2.1.3** Key Sub- Sub-plans and Supporting Documents
	(d) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	**Section 3.6** Key Sub- Sub-plans and Supporting Documents
	(e) a program to monitor and report on the:	NA
	(e)(i) impacts and environmental performance of the development; and	**Section 5** Key Sub- Sub-plans and Supporting Documents

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
	(e)(ii) effectiveness of the management measures set out pursuant to condition E5(d);	**Section 3.6.5** Key Sub-Plans and Supporting Documents
	(f) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	**Section 3.6.3** Key Sub-Plans and Supporting Documents
	(g) a program to investigate and implement ways to improve the environmental performance of the development over time;	**Section 3.6.4** Key Sub-Plans and Supporting Documents
	(h) a protocol for managing and reporting any:	NA
	(h)(i) incident, non-compliance or exceedance of any impact assessment criterion or performance criterion;	**Section 7.2, Section 7.3, Section 7.4**
	(h)(ii) complaint; or	**Section 7.5**
	(h)(iii) failure to comply with other statutory requirements;	**Section 7.1**
	(i) public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and	**Section 7.10**
	(j) a protocol for periodic review of the plan.	**Section 7.8**
E6	**Management Plan Requirements** The Applicant must ensure that management plans prepared for the development are consistent with the conditions of this consent and any EPL issued for the site.	**Section 3.2** All known conditions and environmental licensing requirements are dealt with in this Extraction Plan and Key Sub-plans.
E7	**Revision of Strategies, Plans and Programs** Within three months of: (a) the submission of an incident report under condition E9; (b) the submission of an Annual Review under condition E13; (c) the submission of an Independent Environmental Audit under condition E15; (d) the approval of any modification of the conditions of this consent (unless the conditions require otherwise); or (e) notification of a change in development phase under condition A19; The suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.	**Section 7.8**
E9	**Incident Notification** The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 8.	**Section 7.2**
E10	**Non-Compliance Notification** The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.	**Section 7.3**
E13	**Annual Review** By the end of March in each year after the commencement of the development, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. (Refer to the SSD 8445 Consent Conditions for full condition)	**Section 7.1.3**
E15	**Independent Environmental Audit** Independent Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020).	**Section 7.7.2**
E23	**Monitoring and Environmental Audits** Before the commencement of construction until the completion of all rehabilitation required under this consent, the Applicant must: (a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website: (i) the EIS;	**Section 7.10.1**

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
	(ii) all current statutory approvals for the development; (iii) all approved strategies, plans and programs required under the conditions of this consent; (iv) the proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged; (v) minutes of CCC meetings; (vi) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent; (vii) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; (viii) a summary of the current phase and progress of the development; (ix) contact details to enquire about the development or to make a complaint; (x) a complaints register, updated monthly; (xi) a register of incident and non-compliance notifications made to the Planning Secretary, updated monthly; (xii) the Annual Reviews of the development; (xiii) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant's response to the recommendations in any audit report; (xiv) annual returns made under the National Greenhouse and Energy Reporting legislation (xv) any other matter required by the Planning Secretary; and (b) keep such information up to date, to the satisfaction of the Planning Secretary.	

3.2.1.3 EIS Commitments Relevant to Extraction Plan and Supporting Documents

Condition A2(g) of the Consent states that the development may only be carried out generally in accordance with the EIS. The relevant EIS documents include:

- Tahmoor South Project Environmental Impact Statement, Volumes 1 and 7, dated January 2019;
- Tahmoor South Project Amendment Report, including Appendices A to R and response to submissions, dated February 2020;
- Tahmoor South Project Second Amendment Report, Appendices A to O and response to submissions, dated August 2020; and
- Additional information responses dated 14 September 2020 (including Appendices A to L), 23 October 2020 and 4 November 2020.

EIS commitments relevant to this management plan are outlined in **Table 8**. These EIS commitments do not include commitments that are covered by the SSD 8445 Conditions of Consent.

Table 8 EIS Commitments

EIS Reference	Commitment	Tahmoor Coal Response / Section Addressed
GE-1	**Geomorphology** Potential impact: Impacts to geomorphological features in the Project Area from mining-induced subsidence Management and mitigation measures: - Pre-, during- and post-mining photographic surveys and visual inspections of geomorphological features for each longwall. Results would be documented in the Extraction Plan and Annual Review. - Annual catchment survey at 10 headwater photographic sampling locations to monitor mining-induced subsidence impacts of the Project over time. - A geomorphology survey (baseline and post mining) of waterways overlying each longwall to complement monitoring of subsidence at each longwall. - Installation of subsidence monitoring points before mining of secondary workings for all longwalls. The adaptive management plan for the Project would include re-evaluation of the monitoring	Water Management Plan

EIS Reference	Commitment	Tahmoor Coal Response / Section Addressed
	techniques for subsidence and biodiversity after mining of each longwall. This would then inform monitoring for subsequent longwall panels. - Monitoring of knickpoint formation during mining of each longwall, and implementation of appropriate controls to prevent knickpoint formation. - Reporting of monitoring results within the Annual Review.	
SW-1	**Surface water** Potential impact: Impacts to surface water from mining-induced subsidence Management and mitigation measures: Monitoring would be undertaken before mining commences to assess the baseline conditions above each longwall, and would include: - Geomorphological conditions, including creek mapping and high-resolution photography (before, during and after mining beneath each longwall) of rock bars, shallow alluvium (i.e. less than 2 m deep) and permanent or semi-permanent pools within the subsidence impact area. - Water quality - Stream flow Monitoring sites will include: - Ongoing streamflow monitoring at Hornes Creek, Dog Trap Creek, Eliza Creek and Carters Creek in order to expand baseline data of these waterways up to the period of mining within these catchments; - An additional stream flow gauging station would be installed at Tea Tree Hollow, downstream of the edge of the longwall and upstream of Licensed Discharge Point (LDP) 1. - Additional water level monitoring at Hornes Creek, Dog Trap Creek, Tea Tree Hollow and Eliza Creek to establish baseline water level data to enable the assessment of potential impacts to pool water levels; - Streamflow gauging activities would be continued. Enhanced low flow control weirs would be established at the existing gauging station at Dog Trap Creek downstream and the proposed new gauging station at Tea Tree Hollow to support the generation of reliable continuous flow data (including reliable low flow data) at the stations. Routine water level and water quality monitoring at the stations would also be continued. Monitoring results would be reported in the Annual Review.	Water Management Plan
SW-2	**Surface water** Potential impact: Impacts to surface water from mining-induced subsidence Management and mitigation measures: Monitoring of waterways within 200 m of active longwall mining, including weekly photographic recording and monthly water quality sampling upstream and downstream of potentially affected areas. Results would be analysed in relation to action response triggers, as detailed in the surface water management plan. Monitoring to be reported in the Annual Review.	Water Management Plan
SW-5	**Surface water** Potential impact: Impacts to surface water from mining-induced subsidence Management and mitigation measures: Update the monitoring and management plans and the groundwater/ surface water model in relation to impacts to the Thirlmere Lakes as findings from the OEH research project become available to guide ongoing management of impacts.	Water Management Plan
SW-6	**Surface water** Potential impact: Water quality impacts due to discharge of treated water from LDP1. Management and mitigation measures: Monitoring and management of water quality downstream of LDP1 would include: - A new water quality monitoring site would be established on the Bargo River downstream of the confluence with Tea Tree Hollow and upstream of SW14 to increase the spatial representation of water quality sites downstream of LDP1. - Establishment of a TARP for water quality exceedances which incorporate both baseline and control monitoring data. - The pit top water management system performance would be assessed annually against its predicted performance range. - Revision to the water management plan would be undertaken if the performance review indicates the water management system has, or is likely to be, unable to meet its regulatory performance requirements. - The discharge monitoring would include: - A full suite of metals;	Water Management Plan

EIS Reference	Commitment	Tahmoor Coal Response / Section Addressed
	- Sulfate, total dissolved solids and electrical conductivity, major ions; - Total suspended solids and turbidity; - Any residual settling agent risks (flocculants or coagulants); and - Volume and frequency of controlled discharges and frequency of managed overflows.	
SW-7	**Surface water** Potential impact: Surface water entitlement Management and mitigation measures: Obtain the necessary authorised entitlement to account for the maximum take of water from both surface water and groundwater sources in accordance with the Aquifer Interference Policy.	Water Management Plan
PAR #6	**Surface water** - Prior to the commencement of longwall mining, an adaptive monitoring and TARP would be developed. The following surface water elements would be incorporated into the plan: - TARPs for water quality exceedances which incorporate both baseline and control monitoring data. Site specific trigger values have been developed in accordance with ANZECC (2000) and ANZG (2018) for baseline sites which may potentially be affected by the Project – refer HEC (2019). - TARPs for unexpected flow loss based on analysis of baseline (i.e. pre-subsidence) streamflow data, post-subsidence streamflow data and contemporaneous data from control sites. Catchment flow modelling would also be used in the analysis. - TARPs for unexpected loss of pool water holding capacity based on analysis of baseline (i.e. pre-subsidence) pool water level data, post-subsidence pool water level data and contemporaneous data from control pool sites. Pool water balance modelling would also be used in the analysis particularly during unusual climatic/hydrological conditions.	Water Management Plan
PAR #9	**Surface water** - Monitoring of streamflow, pool water levels and water quality would continue for two years following cessation of longwall subsidence related movement in a watercourse or following completion of any stream/pool remediation.	Water Management Plan
GW-3	**Groundwater** Potential impact: Impacts to groundwater as a result of mining induced subsidence Management and mitigation measures: Update and maintain regional groundwater monitoring network, with monitoring results reported annually within the Annual Review. This would include replacement of failed bores around Tahmoor North and Tahmoor South, as well as establishing new bores. Monitoring of groundwater levels would include: - A condition assessment of bores and monitoring equipment (VMPs) of new bores around Tahmoor South, with a specific update of the GWMP. - Geophysical logging of boreholes that allow changes in groundwater storage and fracture apertures to be quantified and depth of rock deformation to be identified (i.e. observations of non-deformed ground which could be at least 10- 30 m below surface). - Re-install at least one bore in the footprint of a Tahmoor North longwall (e.g. at TNC029) to monitor post-mining groundwater level and groundwater quality. - Monitoring in longwall centre-lines of pre- and post-mining conditions Tahmoor South. This would be undertaken for the longwall (101A), and then every two or three after that. Packer testing would also be undertaken, followed by installing VMPs at four elevations in the Hawkesbury Sandstone and then two in the Bulgo Sandstone to assist in defining a profile of fracturing and depressurisation above longwalls. Results from monitoring would be compared to those from groundwater monitoring of reference sites including upstream and outside the predicted subsidence impact zone where relevant	Water Management Plan
GW-5	**Groundwater** Potential impact: Impacts to groundwater as a result of mining induced subsidence Management and mitigation measures: Revision of the groundwater model to: - Take further advantage of unstructured mesh capabilities; - Incorporate conceptual developments from the OEH Thirlmere Lakes Research Program (once complete); and - Incorporate the results of mine inflow monitoring; - Incorporate monitoring data from groundwater bores in the Western Domain of Tahmoor North.	Water Management Plan
AE-2	**Aquatic ecology** Potential impact:	Biodiversity Management Plan

EIS Reference	Commitment	Tahmoor Coal Response / Section Addressed
	Impacts to aquatic ecology as a result of longwall mining and mining induced subsidence Management and mitigation measures: Undertake monitoring of macroinvertebrates for a baseline of two years prior to longwall extraction. The monitoring program may require adding or relocating sites according to the final mine plan and using the same sampling methods as used in the aquatic monitoring conducted to date.	
AE-3	**Aquatic ecology (existing commitment)** Potential impact: Impacts to aquatic ecology as a result of longwall mining and mining induced subsidence Management and mitigation measures: Implement a BACI (Before After Control Impact) designed monitoring program to compliment the baseline information collected and to assess monitoring impacts in an adaptive management framework.	Biodiversity Management Plan
358/SAR	**Terrestrial ecology** Transmission lines - the proposed transmission lines has been revised to maximise the existing cleared land, road and existing easement as much as practical. Clearing is therefore only required where vegetation encroaches on the proposed transmission line easement. The installation of the transmission line has also been designed to avoid direct impact to threatened flora by: Engaging a suitably qualified ecologist to be present during clearing associated with the transmission line easement to: clearly mark the threatened plants to ensure that the contractors avoid impacts during clearing event; and be present during the installation of the power poles to safeguard against direct impacts to the threatened plants. The transmission line will require on-going maintenance, such as slashing of vegetation within the easement to a height of 2 m. Given the plants will not grow above 2 m in height, the long-term maintenance slashing is unlikely to impact the threatened plants."	Biodiversity Management Plan
LUR-3	**Land use and resources** Potential impact: Impacts of the surface aspects of the Project on land use Management and mitigation measures: Develop a Land Management Plan to manage land use and agricultural land within the Project Area	Land Management Plan
HH-3	**Non-Aboriginal Heritage** Potential impact: Impacts to items of non-Aboriginal Cultural Heritage Significance as a result of longwall mining and mining-induced subsidence. Management and mitigation measures: Develop a site-specific Heritage Property Subsidence Management Plan for Wirrimbirra Sanctuary prior to commencement of mining, including a detailed site inspection. The outcomes of the assessment would be provided in an additional Statement of Heritage Impact in consultation with the National Trust and NSW Heritage Council, or its delegate.	Heritage Management Plan Built Features Management Plan

3.2.1.4 EPBC Act Approval Conditions

Conditions relevant to the Extraction Plan from the approval (EPBC 2017/8084) granted by the DAWE (now Commonwealth DCCEEW) for the Tahmoor South Project are outlined in **Table 9**.

Table 9 EPBC Act Approval Conditions

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
1	The approval holder must not impact any listed threatened species and ecological communities outside the Development Application Area. Within the Development Application Area, the approval holder must not impact more than: a. 7.3 hectares of the Shale Sandstone Transition Forest in Sydney Basin Bioregion. b.0 individuals of Small-flower Grevillea; c. 0 individuals of Bargo Geebung; d. 0 individuals of Rufous Pomaderris e. 1.3 hectares of Koala habitat	The Biodiversity Management Plan outline the proposed ecology monitoring program and management measures for the management of ecology (including threatened species and ecological communities) during mining of LW S1A-S7A.
2	The approval holder must comply with the State development consent conditions A9, B37, B38, B39, B40, B56, B58, B59, B60, C1, C2, C3, C4, C8, C9 and C10	Relevant conditions applicable to this Extraction Plan are discussed

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
		in **Section 3.2.1.1** and **Section 3.2.1.2**. Condition A9 of SSD 8445 is not considered relevant to this Extraction Plan. Conditions B37, B38, B39, B40, B58 and B59 of SSD 8445 are covered by the generic Biodiversity Management Plan for the Tahmoor South Domain, which has been approved by DPE (NSW DPHI).
3	For the protection of water resources, the approval holder must comply with State development consent conditions A7, B23, B24, B30, B31, B32, B33, B34, B35, B36, C1, C2, C8, C9 and C10	Relevant conditions applicable to this Extraction Plan are discussed in **Section 3.2.1.1** and **Section 3.2.1.2**. Condition A7 of SSD 8445 is not considered relevant to this Extraction Plan. Conditions B30, B31, B33, B34, B35 and B36 of SSD 8445 are covered by the generic Water Management Plan for the Tahmoor South Domain, which has been approved by DPE (NSW DPHI). Condition B32 has been deleted as part of Modification 2. Conditions B23 and B24 of SSD 8445 will be reported on in the Annual Review.
4	The approval holder must ensure there is no adverse effect on the function of a water resource as a result of the action.	Water Management Plan
8	The approval holder must submit to Department each approved Extraction Plan for second workings within 2 business days of its approval by the NSW Planning Secretary.	Noted.
9	The approval holder must notify the Department within 5 business days of any proposed changes to any approved Extraction Plan. If the NSW Planning Secretary approves a revised version of an Extraction Plan, the approval holder must provide the Department with the approved revised Extraction Plan within 5 business days of its approval by the NSW Planning Secretary, accompanies by a detailed explanation of what changes have been made and any implications the changes could have for protected matters.	Noted.
10	If the approval holder detects or predicts an exceedance of a performance measure, the approval holder must notify the Department of the exceedance within 2 business days.	Noted.
11	If the approval holder detects an exceedance as described in condition 10, the approval holder must submit to the Department for approval an Impact Response Plan that has been peer reviewed. Each Impact Response Plan must at a minimum: a. be prepared by a suitably qualified person; b. describe all potential and actual impacts to water resources arising from the exceedance; c. include conceptual modelling, as well as a review of all historical monitoring data to determine the stressor-response relationships for any potential GDEs and consideration of potential contributing activities; d. consider and where appropriate include local scale numerical modelling with consideration of potential contributing activities; e. derive a scientifically-robust rectification strategy based on multiple lines of evidence and field data to support the assessment of the environmental values of water resources (including the groundwater-dependence of any potential GDEs) within the Development Application Area. f. identify if any further investigations are required to determine the cause of, and/or corrective actions, for the exceedance; g. include the mitigation and management measures that the approval holder has taken and/or proposes to take to reverse the exceedance, including data demonstrating the effectiveness of the mitigation and management measures;	**Section 7.4.3** Tahmoor Coal will also observe Conditions 12-16 of this approval.

Condition	Condition Requirement	Tahmoor Coal Response / Section Addressed
	h. provide justification for how the proposed mitigation and management measures will achieve and maintain the requirements of condition 4; and i. include a peer review and details of how the approval holder has addressed any inadequacies raised in the peer review. The approved Impact Response Plan must be implemented.	
21	The approval holder must: a. submit plans electronically to the Department; b. unless otherwise agreed to in writing by the Minister, publish each plan on the website within 20 business days of the date: i. of this approval, if the version of the plan to be implemented is specified in these conditions; or ii. that the plan is submitted to the Minister or the Department if the plan does not require the approval of the Minister but was not finalised before the date of this approval; or iii. that the plan was approved in writing by the Minister or by the NSW Planning Secretary, if the plan requires the approval of the Minister or by the NSW Planning Secretary; c. exclude or redact sensitive ecological data from plans that are to be published on the website or provided to a member of the public; and d. keep plans published on the website for the period this approval has effect.	**Section 7.10** Noted.
22	The approval holder must prepare a compliance report for each 12 month period following the date of commencement of the action, or otherwise as agreed in writing by the Minister. The approval holder must: a. publish each compliance report on a website within 60 business days following the relevant 12 month period; b. notify the Department by email that a compliance report has been published on the website and provide the website's link for the compliance report within five business days of the date of publication; c. keep all compliance reports publicly available on the website until this approval expires; d. exclude or redact sensitive ecological data from compliance reports published on the website; and e. where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication.	**Section 7.1.3** Tahmoor Coal have obtained DAWE (now Commonwealth DCCEEW) approval to submit this annual compliance report in the form of the Annual Review, which is submitted by 31 March annually.
23	The approval holder must notify the Department in writing of any: incident, or non-compliance with the conditions, or non-compliance with the commitments made in plans. The notification must be given as soon as practicable, and no later than two business days after becoming aware of the incident or non-compliance. The notification must specify: a. any condition which is in breach; b. a short description of the incident and/or non-compliance; and c. the location (including co-ordinates), date, and time of the incident and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.	**Section 7.2.3, Section 7.3.3**
24	The approval holder must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in plans as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying: a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future; b. the potential impacts of the incident or non-compliance; and c. the method and timing of any remedial action that will be undertaken by the approval holder.	**Section 7.2.3, Section 7.3.3**
28	The approval holder must comply with condition A6 in Schedule 2 of the State Development Consent.	The extraction of LW S1A-S6A will be completed by 31 December 2033 or within 10 years of commencement of second workings.

3.2.2 Mining Lease Conditions

The LW S1A-S7A Extraction Plan Study Area is associated with two approved CCLs held by Tahmoor Coal - CCL 716 and CCL 747 (refer to **Figure 2**).

CCL 716 is the original Tahmoor Lease and was granted on 15 June 1990 and expired on 13 March 2021. CCL 716 was renewed on 16 August 2023 and expires on 13 March 2042.

CCL 747 is the Bargo Mining Lease and was granted on 23 May 1990 and expires on 6 November 2025.

CCL 747 was renewed on 16 May 2025, effective from 7 November 2025 and expires on 6 November 2046.

Table 10 outlines the mining lease conditions relating directly to subsidence management from CCL 716 and CCL 747.

Table 10 Mining Lease Conditions Relevant to this Extraction Plan

Mining Lease	Condition Number	Condition Requirement	Tahmoor Coal Response / Section Addressed
CCL 716	6	The lease holder shall not knowingly destroy, deface or damage any aboriginal place or relic within the subject area, except in accordance with an authority issued under the *National Parks and Wildlife Act 1974,* and shall take every precaution in drilling, excavating or disturbing the land against any such destruction, defacement or damage.	Addressed in the HMP.
CCL 747	5	The lease holder shall observe and perform any instruction given to which may be given by the Minister regarding any aboriginal relics within the subject area.	Such a direction can be given through the Extraction Plan process. Addressed in the HMP.

3.2.3 Environmental Licences

Tahmoor Mine operates under EPL 1389, which authorises carrying out of scheduled activities associated with coal works, mining for coal and sewage treatment processing by small plants.

An Annual Return stating Tahmoor Mine's compliance with the conditions of EPL 1389 and summarising monitoring results and complaints is completed and submitted to the EPA by 28 February of each year. Each Annual Review is lodged via the EPL portal.

Tahmoor Coal holds Water Access Licences as per **Table 11** below. Further details of these licences and Tahmoor Coal's compliance with the licences are discussed in the Water Management Plan.

Table 11 Water Access Licences

Approval Title / Description	Date Granted	Expiry Date
Environmental Protection Licence 1389	01/05/1994, latest variation 28/06/2024	No Expiry
WAL36442	6/12/2013	No Expiry
WAL25777	27/10/2014	No Expiry
SWC871469 (Leased)	11/07/2025	01/07/2026
SWC868868 (Leased)	01/07/2024	30/06/2025*
WAL43631	08/03/2021	No Expiry
WAL43655	09/03/2021	No Expiry
WAL43656	1/8/2022	No Expiry
WAL43657	09/03/2021	No Expiry
WAL43659	09/03/2021	No Expiry
WAL45204	07/08/2024	No Expiry
XSTR200005 Dangerous Goods Licence	02/02/2017	02/02/2027
5061521 Radiation Management Licence	29/10/2025	29/10/2026

*Lease in process of renewal for FY2026

3.2.4 Work, Health and Safety Legislations

Tahmoor Coal has developed a Health and Safety Management Plan (TAH-HSEC-00189) that integrates plans, policies and procedures that enables a systematic approach to establishing and maintaining effective systems to manage health and safety consistent with WHS legislation.

Tahmoor Mine has been planned so that LW S1A-S6A will meet all the requirements of the following Work Health and Safety (WHS) Legislation:

- *Work Health and Safety Act 2011* (WHS Act);
- *Work Health and Safety Regulation 2017* (WHS Regulation);
- *Work Health and Safety (Mines and Petroleum Sites) Act 2013* (WHSMP Act); and
- *Work Health and Safety (Mines and Petroleum Sites) Regulation 2022* (WHSMP Regulation).

The WHS Act and WHS Regulations came into force on 1 January 2012. The WHS Act, is the primary piece of legislation dealing with the health and safety of workers in NSW. The WHSMP Act and WHSMP Regulations apply to all mining workplaces in NSW commenced on 1 February 2015 and updated on 1 September 2022. These laws support the WHS Act and WHS Regulation and provide additional provisions for work health and safety issues unique to mines and petroleum sites.

This Extraction Plan has been prepared to address the relevant requirements of the WHS legislation, principally within the context of subsidence related risks to public safety with regards to private property and public infrastructure.

Details regarding the compliance with the relevant requirements of the WHS Regulations and WHSMP Regulations are provided in **Table 15**, as well as being discussed in the Public Safety Management Plan (PSMP).

3.2.4.1 WHS Requirements for Persons Conducting a Business or Undertaking

In accordance with Section 19 of the WHS Act, all persons conducting a business or undertaking (PCBUs), including mine operators and contractors, have a primary duty of care to ensure the health and safety of workers they engage, or whose work activities they influence or direct, so far as is reasonably practicable. PCBUs must also ensure, so far as is reasonably practicable, the health and safety of other persons is not put at risk from work carried out as part of the conduct of the business or undertaking.

Under Clause 14(1) of the WHSMP Regulation, a PCBU at a mine, including the Mine Operator, must manage risks to health and safety associated with the mining operations in accordance with Part 3.1 of the WHS Regulation. Specifically, Clause 70(1) of the WHSMP Regulation requires the operator of an underground coal mine to (in complying with Clause 14) manage risks to health and safety associated with subsidence at the mine. Clause 70(2) of the WHSMP Regulation outlines specific requirements regarding subsidence including monitoring, investigation and reporting.

The Mine Operator's responsibilities include developing and implementing the Health and Safety Management Plan (TAH-HSEC-00189) that is used as the primary means of ensuring, so far as is reasonably practicable that the above discussed PCBU duty of care.

Details regarding the compliance with the relevant requirements of the WHS Regulations and WHSMP Regulations are provided in **Table 12**, as well as being discussed in the PSMP.

3.2.4.2 Subsidence as a Principal Hazard

According to Clause 4 of the WHSMP Regulation provides the definition of a principal hazard as:

> *"…an activity, process, procedure, plant, structure, substance, situation or other circumstance relating to the carrying out of mining operations or petroleum operations that has a reasonable potential to result in multiple deaths in a single incident or a series of recurring incidents in relation to*

(vi) subsidence,"

In accordance with Table 7 in Condition C1 and Condition C7 of SSD 8445, all first workings in the Tahmoor South Domain are required to be designed to remain stable and non-subsiding in the long-term, except insofar as they may be impacted by approved second workings. While it is not considered that there is reasonable potential for a subsidence incident to cause multiple fatalities, Tahmoor Coal has prepared this Extraction Plan generally in accordance with the relevant WHS legislation and guidelines as outlined further below and detailed in **Table 12** and the PSMP.

Under Clauses 27(1) and 27(2) of the WHSMP Regulation, the Mine Operator must identify all principal mining hazards associated with mining operations and conduct a risk assessment in relation to each principal hazard identified that involves a comprehensive and systematic investigation and analysis of all aspects of risk to health and safety associated with each principal hazard. Tahmoor Coal has prepared a risk assessment to identify and assess principal hazards and controls in relation to subsidence as discussed further in **Section 7.6**, **Table 12**, and the PSMP.

Table 12 Work Health and Safety Legislation Compliance

WHS Legislation and Clause	Section Addressed	WHS Legislation and Clause
WHS Regulations		
Clause 34	**Duty to identify hazards** A duty holder, in managing risks to health and safety, must identify reasonably foreseeable hazards that could give rise to risks to health and safety.	**Section 7.6** PSMP
Clause 35	**Managing risks to health and safety** A duty holder, in managing risks to health and safety, must: (a) eliminate risks to health and safety so far as is reasonably practicable, and (b) if it is not reasonably practicable to eliminate risks to health and safety, minimise those risks so far as is reasonably practicable.	**Section 3.6** Section 6 of WMP, LMP, BMP and HMP.
Clause 36	**Hierarchy of control measures** (1) This clause applies if it is not reasonably practicable for a duty holder to eliminate risks to health and safety. (2) A duty holder, in minimising risks to health and safety, must implement risk control measures in accordance with this clause. (3) The duty holder must minimise risks, so far as is reasonably practicable, by doing 1 or more of the following: (a) substituting (wholly or partly) the hazard giving rise to the risk with something that gives rise to a lesser risk, (b) isolating the hazard from any person exposed to it, (c) implementing engineering controls. (4) If a risk then remains, the duty holder must minimise the remaining risk, so far as is reasonably practicable, by implementing administrative controls. (5) If a risk then remains, the duty holder must minimise the remaining risk, so far as is reasonably practicable, by ensuring the provision and use of suitable personal protective equipment. Note. A combination of the controls set out in this clause may be used to minimise risks, so far as is reasonably practicable, if a single control is not sufficient for the purpose.	**Section 3.6, Section 7.6** PSMP Section 6 of WMP, LMP, BMP and HMP.
Clause 37	**Maintenance of control measures**	**Section 3.6** Section 6 of WMP, LMP, BMP and HMP.

	A duty holder who implements a control measure to eliminate or minimise risks to health and safety must ensure that the control measure is, and is maintained so that it remains, effective, including by ensuring that the control measure is and remains: (a) fit for purpose, and (b) suitable for the nature and duration of the work, and (c) installed, set up and used correctly.	
Clause 38	**Review of control measures** (1) A duty holder must review and as necessary revise control measures implemented under this Regulation so as to maintain, so far as is reasonably practicable, a work environment that is without risks to health or safety. (2) Without limiting subclause (1), the duty holder must review and as necessary revise a control measure in the following circumstances: (a) the control measure does not control the risk it was implemented to control so far as is reasonably practicable, (b) before a change at the workplace that is likely to give rise to a new or different risk to health or safety that the measure may not effectively control, (c) a new relevant hazard or risk is identified, (d) the results of consultation by the duty holder under the Act or this Regulation indicate that a review is necessary, (e) a health and safety representative requests a review under subclause (4). (3) Without limiting subclause (2) (b), a change at the workplace includes: (a) a change to the workplace itself or any aspect of the work environment, or (b) a change to a system of work, a process or a procedure. (4) A health and safety representative for workers at a workplace may request a review of a control measure if the representative reasonably believes that: (a) a circumstance referred to in subclause (2) (a), (b), (c) or (d) affects or may affect the health and safety of a member of the work group represented by the health and safety representative, and (b) the duty holder has not adequately reviewed the control measure in response to the circumstance.	**Section 3.6, Section 7.6** PSMP Section 6 of WMP, LMP, BMP and HMP.
WHSMP Regulations		
Clause 14	**Management of risks to health and safety** (1) A person conducting a business or undertaking at a mine or petroleum site must manage risks to health and safety associated with mining operations or petroleum operations at the mine or petroleum site in accordance with the WHS Regulations, Part 3.1. (2) A person conducting a business or undertaking at a mine or petroleum site must ensure a risk assessment is conducted in accordance with this section by a person who is competent to conduct the risk assessment having regard to the nature of the hazard. (3) In conducting a risk assessment, the person must have regard to the following— (a) the nature of the hazard, (b) the likelihood of the hazard affecting the health or safety of a person, (c) the severity of the potential health and safety consequences. (4) Subsection (3) does not limit the operation of another requirement to conduct a risk assessment under this Regulation.	**Section 7.6** PSMP

	(5) A person conducting a business or undertaking at a mine or petroleum site, who is the operator of the mine or petroleum site or who is a contractor, must keep a record of the following— (a) each risk assessment conducted under this section and the name and competency of the person who conducted the risk assessment, (b) the control measures implemented to eliminate or minimise a risk that was identified by the risk assessment. (6) A person conducting a business or undertaking at a mine or petroleum site is not required to keep a record of a risk assessment if— (a) the risk assessment is required to be carried out by an individual before the worker commences a task that forms part of an activity, and (b) the person keeps a record of risk assessments that addresses the overall activity being undertaken, of which the task forms a part. (7) A record kept under subsection (5) by an operator of a mine or petroleum site forms part of— (a) the safety management system of the mine or petroleum site, and (b) the records of the mine or petroleum site. (8) A record, kept under subsection (5) by a contractor who has prepared a contractor health and safety management plan, forms part of the plan.	
Clause 15	**Review of control measures** (1) A person conducting a business or undertaking at a mine or petroleum site must review and as necessary revise control measures implemented under section 14(5)(b) in the following circumstances— (a) an audit of the effectiveness of the safety management system for the mine or petroleum site indicates a deficiency in a control measure, (b) a worker is moved from a hazard or assigned to different work in response to a recommendation contained in a health monitoring report provided under Part 4, (c) an incident referred to in section 124 occurs, (d) another incident occurs that is required to be notified to the regulator under the WHS laws. (2) The operator of a mine or petroleum site must ensure a control measure the subject of a request under the WHS Regulations, clause 38(4) is reviewed and as necessary revised, whether the request is made— (a) to the operator by a health and safety representative, or (b) notified to the operator under subsection (3). (3) A person conducting a business or undertaking at the mine or petroleum site who is not the operator of the mine or petroleum site must immediately notify the operator of a request made to the person under the WHS Regulations, clause 38(4). (4) A health and safety representative for workers at a mine or petroleum site may request a review of a control measure under the WHS Regulations, clause 38(4) as if the circumstances referred to in subsection (1) were included as a circumstance in the WHS Regulations, clause 38(4)(a).	**Section 7.2, Section 7.6, Section 7.7, Section 7.8** PSMP
Clause 27	**Identification of Principal Mining Hazard Management Plan** (1) The operator of a mine or petroleum site must identify all principal hazards associated with mining operations or petroleum operations at the mine or petroleum site.	**Section 7.6** PSMP

	(2) The operator must conduct, in relation to each principal hazard identified, a risk assessment that involves a comprehensive and systematic investigation and analysis of all aspects of risk to health and safety associated with the principal hazard. (3) The operator, in conducting a risk assessment under subsection (2), must— (a) use investigation and analysis methods appropriate to the principal hazard being considered, and (b) consider the principal hazard individually and also cumulatively with other hazards at the mine or petroleum site.	
Clause 28	**Preparation of Principal Mining Hazard Management Plan** (1) The operator of a mine or petroleum site must prepare a principal hazard management plan for each principal hazard associated with mining operations or petroleum operations at the mine or petroleum site in accordance with this section and Schedule 1. (2) A principal hazard management plan must— (a) provide for the management of all aspects of risk control in relation to the principal hazard, and (b) as far as reasonably practicable, be set out and expressed in a way that is readily understandable by persons who use it. (3) A principal hazard management plan must— (a) describe the nature of the principal hazard, and (b) describe how the principal hazard relates to other hazards associated with mining operations or petroleum operations at the mine or petroleum site, and (c) describe the analysis methods used in identifying the principal hazard, and (d) include a record of the most recent risk assessment conducted in relation to the principal hazard, and (e) describe the investigation and analysis methods used in determining the control measures to be implemented, and (f) describe all control measures to be implemented to manage risks to health and safety associated with the principal hazard, and (g) describe the arrangements in place for providing the information, training and instruction required by the WHS Regulations, clause 39 in relation to the principal hazard, and (h) refer to the design principles, engineering standards and technical standards relied on for control measures for the principal hazard, and (i) set out the reasons for adopting or rejecting each control measure considered. (4) The operator of a mine or petroleum site must consider the following when preparing a principal hazard management plan for a principal hazard at the mine or petroleum site— (a) the matters set out in Schedule 1 for the principal hazard, (b) other matters relevant to managing the risks associated with the principal hazard. (5) The operator of a mine or petroleum site at which there is a principal hazard must ensure no mining operations or petroleum operations are carried out at the mine or petroleum site that may give rise to the hazard before the principal hazard management plan for the hazard has been prepared in accordance with this section.	The Principal Mining Hazard Management Plan for subsidence was revised and updated to include LW S1A-S6A prior to the commencement of extraction.

Clause 70	**Subsidence** (1) In complying with section 14, the mine operator of an underground coal mine must manage risks to health and safety associated with subsidence at the mine. (2) Without limiting subsection (1), the mine operator must ensure— (a) as far as reasonably practicable, the rate, method, layout, schedule and sequence of mining operations do not put the health and safety of a person at risk from subsidence, and (b) monitoring of subsidence is conducted, including monitoring of its effects on relevant surface and subsurface features, and (c) an investigation of subsidence and an interpretation of subsidence information is carried out only by a competent person, and (d) all subsidence monitoring data is provided to the regulator— (i) in the approved way and form, and (ii) at the times required by the regulator, and (e) as far as reasonably practicable, procedures are implemented for the effective consultation, co-operation and co-ordination of action in relation to subsidence between the mine operator and relevant persons conducting business or an undertaking that is, or is likely to be, affected by subsidence.	**Section 3.3, Section 5, Section 7.6**, Master TARP (**Appendix C**) PSMP
Clause 124	Duty to notify regulator of certain incidents (1) The operator of a mine or petroleum site must take all reasonable steps to ensure the regulator is notified in accordance with this section after becoming aware of an incident, other than a notifiable incident, arising out of the carrying out of mining operations or petroleum operations at the mine or petroleum site, but only if the incident— (a) results in an illness or injury that requires medical treatment within the meaning of Schedule 9, section 12, or (b) is a high potential incident. (5) In this clause. High potential incident means any indication from monitoring data of the development of subsidence which may result in any incident referred to in clause: • 190 (a) (p) – a failure of ground, or of slope stability control measures, or • 190 (a) (q) – rock falls, instability of cliffs, steep slopes or natural dams, occurrence of sinkholes, development of surface cracking or deformations or release of gas at the surface, due to subsidence, or • 190 (a) (p) and (q) These clauses are relevant only if a person could reasonably be expected to be present.	**Section 7.2,** Master TARP (**Appendix C**) PSMP
Schedule 1 Subsidence Clause 6	**Principal Hazard Management Plans – additional matters to be considered** **Subsidence** The following matters must be considered in developing the control measures to manage the risks of subsidence— (a) the characteristics of all relevant surface and subsurface features, (b) the characteristics of all relevant geological, hydrogeological, hydrological, geotechnical, topographic and climatic conditions, including conditions that may cause elevated or abnormal subsidence or the formation of sinkholes, (c) the characteristics of a previously excavated or abandoned workings that may interact with a proposed or existing mine workings,	Subsidence Predictions and Impact Assessment Report (**Appendix A**) Master TARP (**Appendix C**)

	(d) the existence, distribution, geometry and stability of significant voids, standing pillars or remnants within an old pillar workings that may interact with a proposed or existing mine workings, (e) the predicted and actual nature, magnitude, distribution, timing and duration of subsidence, (f) the rate, method, layout, schedule and sequence of mining operations	
Schedule 3 Clause 17	**High Risk Activities** (1) Secondary extraction is identified as a high risk activity. (2) The waiting period for the activity is 3 months. (3) The information and documents that must be provided in relation to the activity are as follows— (a) details of the authoritative sources used in determining that the proposed method of work can be done safely, (b) engineering plans showing the method and sequence of extraction, endorsed by the individual nominated to exercise the statutory function of mining engineering manager at the mine, (c) information about the land above or near the proposed activity including land use and details of who owns or occupies land that may be affected by subsidence, (d) for a pillar extraction, details of the procedures for the recovery of buried and immobile mining plant in or around a goaf, (e) details of how the risks to the health and safety of workers and other persons from subsidence caused by the activity will be managed.	A High Risk Activity Notification, as required by WHS Regulation, was submitted separately to this Extraction Plan, prior to the commencement of secondary extraction.

3.2.4.3 Principal Hazard Management Plan

Under Clause 28 of the WHSMP Regulation, the Mine Operator must prepare a Principal Hazard Management Plan for each principal hazard associated with mining operations in accordance with Clause 28 and Schedule 1. The Principal Hazard Management Plan for subsidence was revised and updated to include LW S1A-S76A prior to the commencement of secondary extraction of LW S1A. The Plan was further updated to include Longwall South 7A following approval of Modification 3, prior to the commencement of LW S7A.

3.2.4.4 High Risk Activity

A Mine Operator must give notice of a High Risk Activity to the regulator and ensure that the requirements of Clause 35 and Schedule 3 of the WHSMP Regulation are complied with. In Schedule 3 of the WHSMP Regulation, there are three High Risk Activities that relate to subsidence:

- Clause 17 – Secondary extraction;
- Clause 18 – Shallow depth of cover mining; and
- Clause 30 – Highwall mining.

Mining of LW S1A-S7A involves secondary extraction, therefore it is considered a High Risk Activity under Schedule 3, Clause 17 of the WHSMP Regulation. A High Risk Activity Notification, as required by WHS Regulation, was submitted separately to this Extraction Plan, prior to the commencement of secondary extraction of LW S1A.

It is noted that Clause 18 and Clause 19 do not apply to the extraction of LW S1A-S7A.

3.2.4.5 Managing Risks of Subsidence Guide: WHS (Mines and Petroleum Sites) Legislation

To assist Mine Operators in complying with their obligations under the WHS laws relevant to subsidence,

the Resources Regulator released the document *Managing Risks of Subsidence Guide: WHS (Mines and Petroleum Sites) Legislation* (Resources Regulator, 2017). This Extraction Plan has been prepared in accordance with the requirements of the Guideline.

Section 2.2.2 of the *Managing Risks of Subsidence Guideline* lists the surface and subsurface features which could give rise to risks to health and safety, if the features are affected by subsidence. The surface and subsurface features include:

- Public utilities (e.g. highways, railways, tunnels, bridges, air strips, electrical transmission infrastructure or pressurised gas pipelines);
- Public amenities (e.g. shopping centres, hospitals, churches, sport facilities, child care centres or schools);
- Built features other than public utilities and amenities (e.g. dwellings, factories, workshops, privately owned gas storages or surface mining voids or facilities); and
- Natural features (e.g. cliffs, steep slopes, natural caves or dams or surface of land), where subsidence may result in hazardous conditions due to instability of rock or soil masses, rock falls, landslide, fractures, sinkholes, inundation, gas release or pollution of drinking water.

A summary of the relevant natural and built features that may pose a risk to public safety, the WHS risk assessment undertaken, and the management and monitoring of subsidence in relation to public safety is addressed in the PSMP.

3.2.5 Extraction Plan Guidelines

This Extraction Plan has been prepared in accordance with the DPE *Extraction Plan Guidelines* (DPE, 2022), as summarised in **Table 13**.

Table 13 Extraction Plan Guideline Requirements

Extraction Plan Guideline	Section Detail	Section Addressed
1. Title block	A title block should be included at the beginning of the Extraction Plan, which contains the: • name of the applicant company; • name of mine; • development consent and mining lease reference numbers; • Extraction Plan title, date and reference number; and • the signature(s) of person(s) taking responsibility for the accuracy and comprehensiveness of the information contained within the plan, including an authorised representative of the lease holder and the mine manager (for the purposes of relevant safety legislation).	Page 2
2. Development of the Plan	The process of development of the Extraction Plan should be described. Most importantly, this section should address consultation undertaken by the Applicant with affected agencies and other key stakeholders, such as the owners and/or operators of both publicly and privately-owned land and infrastructure and the mine's Community Consultative Committee. This section should also describe the process of reviewing and updating the predictions of subsidence effects, subsidence impacts and environmental consequences used in previous environmental impact assessment or environmental management plan documentation relied upon by the Applicant (eg the predictions in any previous Environmental Impact Statement and/or the predictions in any previous Extraction Plan or SMP Application).	**Section 2**
3. Overview	The overview section is an essential introduction to the Extraction Plan. It should accurately describe:	**Section 3**

Extraction Plan Guideline	Section Detail	Section Addressed
	• Mine planning and design; • Subsidence predictions; • Performance objectives and other regulatory requirements; and • Subsidence management strategies and measures.	
4. Key sub-plans:	The main body of the Extraction Plan primarily comprises a set of six key sub-plans. It is appropriate that these are presented in a particular order, even if some of the later plans deserve a particular priority due to local circumstances (eg the Built Features or Heritage Management Plans). The preferred order for these sub-plans is as follows: • Water Management Plan; • Land Management Plan; • Biodiversity Management Plan; • Heritage Management Plan; • Built Features Management Plan; and • Public Safety Management Plan. All six key sub-plans should give appropriate consideration to risk assessment and risk management.	**Section 4** Key Sub-plans and Supporting Documents
5. Subsidence Monitoring Plan	The key sub-plans should be followed by a Subsidence Monitoring Plan. This program should address two purposes. The first is to set out the program for monitoring the *subsidence effects* associated with the proposed coal extraction. The second is to summarise and consolidate the various environmental monitoring programs presented in each of the key sub-plans. These environmental monitoring programs should be directed towards monitoring the *subsidence impacts* and environmental consequences of mine subsidence.	**Section 5** Subsidence Monitoring Plan
6. Implementation	This section of the Extraction Plan should address all key elements of how the plan is going to be implemented, including reporting, regular review and key responsibilities. This section should follow the structure set out below: • Reporting Framework; • Review of the Extraction Plan; • Review of other Management Plans; and • Key Responsibilities.	**Section 7**
7. Graphical Plans	The following plans are required as part of the application: • Plan 1 • Plan 2 • Plan 3 • Plan 4 (not required) • Plan 5 • Plan 6 • Plan 7 • Plan with aerial photography	**Section 6** Graphical Plans
8. Attachments to the Extraction Plan	All other material necessary to support the Extraction Plan should be included as Attachments or Appendices.	Appendices A-D

3.3 Mine Planning and Design

3.3.1 Geology

3.3.1.1 Sydney Basin

The Sydney Basin is a large sedimentary basin on the east coast of Australia covering almost 50,000 km^2, whereby approximately 44,000 km^2 is located onshore and another 5,000 km^2 located offshore extending to the edge of the continental shelf. The basin forms part of the larger Sydney Gunnedah-Bowen Basin system, as outlined on **Figure 4**, which extends 1,700 km north from coastal southern NSW to Townsville.

The Sydney Basin is sedimentary in origin, with deposition of sediments occurring from the early Permian (290 million years ago) through to the latter part of the Triassic (200 million years ago). The Sydney Basin on-laps the Lachlan Fold Belt to the west and south, with basin depth increasing to the north and east.

The geological strata of the Sydney Basin can be summarised (from youngest to oldest) as following:

- Unconsolidated alluvial deposits along the major rivers and dune/beach deposits along the coast (Tertiary and Quaternary in age);
- Fractured volcanic intrusive and flows (and associate dyke swarms and occasional sills) within the Sydney Basin (Jurassic and Tertiary in age);
- Sedimentary rocks (including substantial coal measures at depth) of the Sydney Basin (Permian and Triassic age); and
- Fractured basement rocks below the Sydney Basin (Palaeozoic age).

3.3.1.2 Local Geology

The stratigraphy of the local geology (from youngest to oldest) can be summarised as below (and illustrated in **Figure 5**):

- Alluvial sediments – sediments consisting of sand, gravel, silt and clay overlie the Wianamatta Shales and Hawkesbury Sandstone along the major rivers and creeks. These sediments are rarely more than 20 m thick;
- Wianamatta Group – the Triassic Wianamatta Group comprises the surficial geology over most of the area. It can be very thin to more than 100m thick in some of the more elevated areas. The Wianamatta Group primarily comprises shales, with occasional calcareous claystone, laminate and coal. The Ashfield Shale is the most widespread rock type, at surface, across the area;
- Hawkesbury Sandstone:
  - Mittagong Formation – separates the Ashfield Shale from the underlying Hawkesbury Sandstone. It is a thin layer (generally less than 10 m thick) comprising dark grey to grey alternating beds of shale laminate, siltstone and quartzose sandstone;
  - Hawkesbury Sandstone – alluvial in origin, with a thickness of approximately 170 m in the region. Sandstone thicknesses increase to the north. The Triassic Hawkesbury Sandstone is generally medium to coarse grained quartz sandstone, with interbedded siltstone, finer grained sandstone and shale lenses. Shale lenses are common within this formation;
- Narrabeen Group – the total thickness of these Triassic rocks is approximately 450 m across the area and consists of the following subgroups:
- Gosford Sub-group:
  - Newport Formation – medium grained, light to dark grey, quartzose sandstone interbedded with siltstone;
  - Garie Formation – a thin, cream kaolinite claystone, which grades upwards to grey;
- Clifton Sub-group:
  - Bald Hill Claystone – grey to red/brown claystones and mudstones, occasional siderite nodules and generally softer than the overlying Garie Formation;
  - Bulgo Sandstone – white to grey coarse grained sandstone, fining upwards to coarse pebbly sandstone, with interbedded siltstone;
  - Stanwell Park Claystone – alternating light grey/green to brown sandstone and claystone

intervals, with minor conglomerate;

- Scarborough Sandstone – fine to very coarse grained, white to grey sandstone, with occasional siltstone and conglomerate laminae;
- Wombarra Claystone – light grey/green to dark grey claystone, siltstone, mudstone with minor quartz lithic sandstone and conglomerate;

- Illawarra Coal Measures – the sedimentary thickness is approximately 300 m in the central area of the Southern Coalfield. The upper sections of the Permian Illawarra Coal Measures (Sydney Sub-group) contain the major coal seams including the Bulli, Balgownie and Wongawilli Coal seams. The underlying Cumberland Sub-group generally contains thin coal seam development;
- Shoalhaven Group – The Permian Budgong Sandstone is shallow marine to littoral, typically comprising fine and course grained sandstone;
- Talateran Group – basal Permian coal-bearing sequences including the Clyde Coal Measures and the Wasp Head Formation; and
- Basement geology – The Southern Sydney Basin Permian and Triassic rocks have been deposited upon early to middle Palaeozoic basement rocks of the Lachlan Fold Belt. These rocks consist of intensely folded and faulted slates, phyllites, quartzite sandstones and minor limestones of Ordovician to Silurian age.

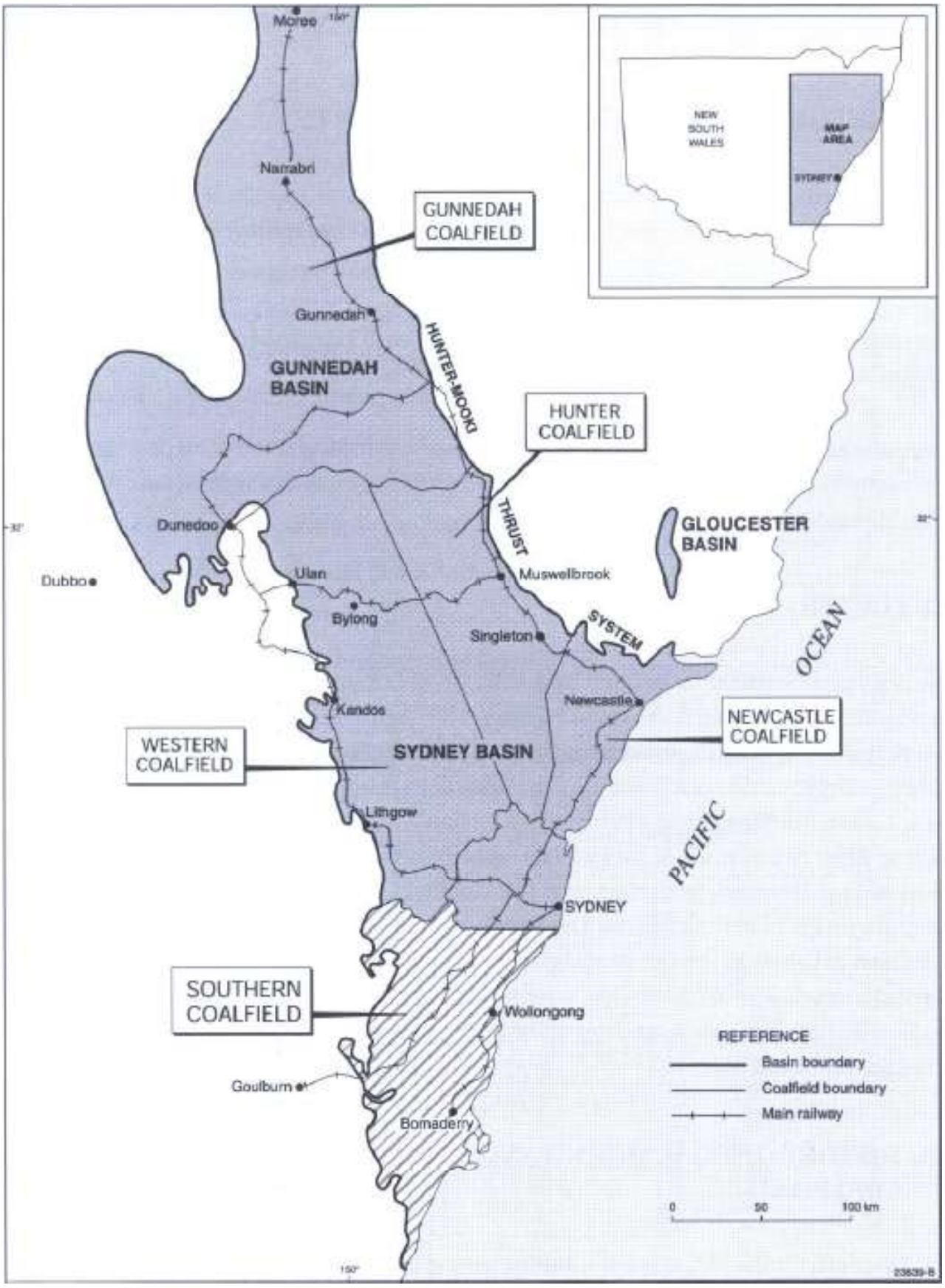

Figure 4 **Sydney Basin and the Southern Coalfields**

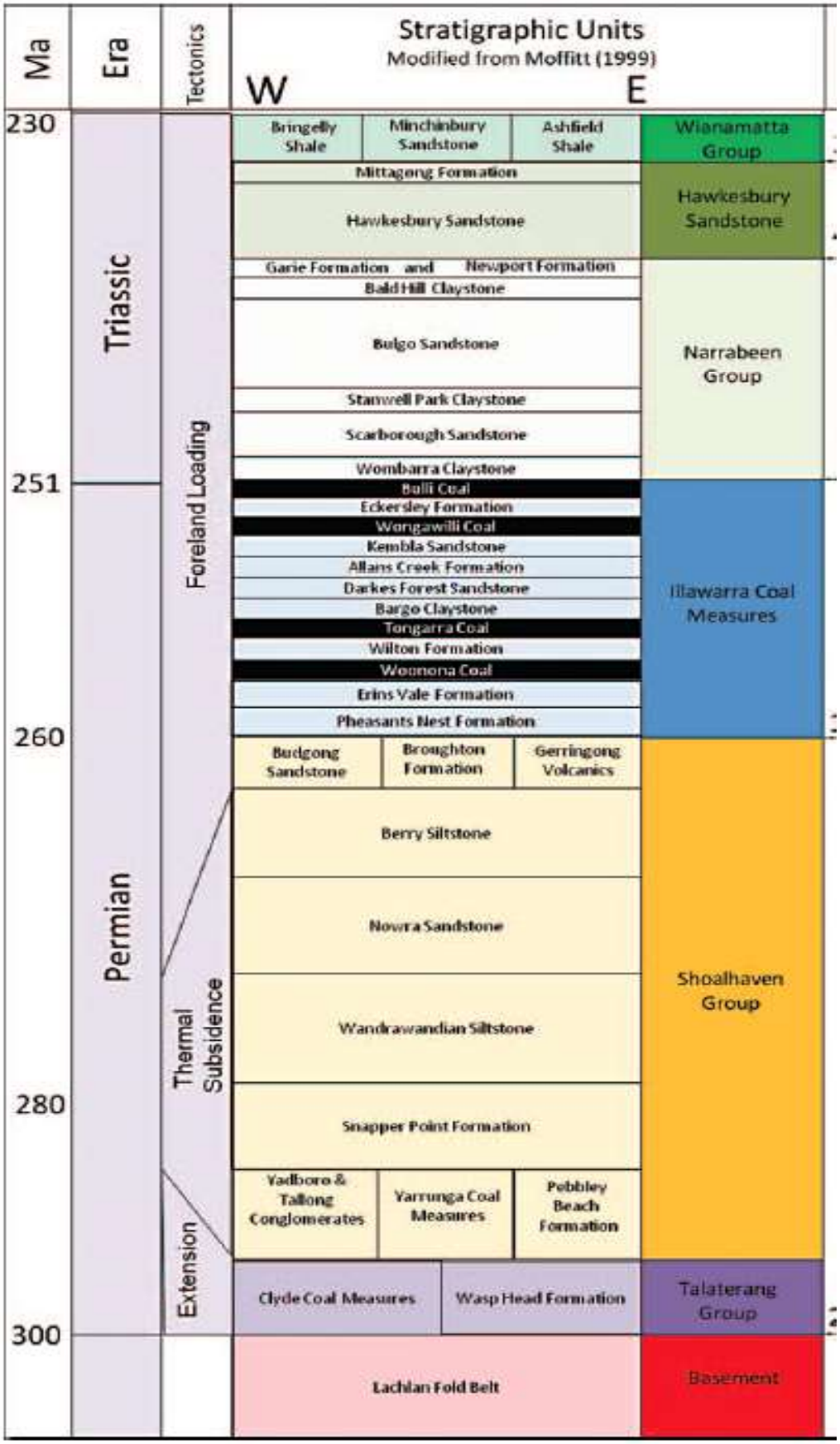

Figure 5 **Southern Coalfield Stratigraphy**

3.3.1.3 Southern Coalfield

The Southern Coalfield comprises the southern portion of the Sydney Basin, as outlined in **Figure 4**, covering an area south of Sydney almost to Batemans Bay, bounded in the west by the towns of Camden and Mittagong, and Helensburgh and Wollongong in the east.

The geological units of major economic significance in the Southern Coalfield are the late Permian Illawarra Coal Measures, a 240 m thick deltaic sequence that occurs above the Shoalhaven Group and beneath the Hawkesbury Sandstone and Narrabeen Group. The Illawarra Coal Measures are divided into two subgroups - the basal Cumberland Subgroup containing both the Pheasants Nest Formation and Erins Vale Formation, and the Sydney Subgroup containing the economic coal seams that are the Bulli, Balgownie, Wongawilli, and Tongarra seams.

The coal measures outcrop above sea level approximately 20 km to the north of Wollongong. The Illawarra Coal Measures dip at approximately four degrees to the north-west in the Illawarra that creates the outcrop pattern that extends from sea level about 20 km north of Wollongong before turning westward to track the northern side of the Shoalhaven River valleys.

The coal in the Southern Coalfield differs in rank from the other coalfields of the Sydney Basin. It is generally low to high volatility bituminous coal, in contrast to the medium to high volatility bituminous coal which predominates in other regions. The coal is buried at depths of greater than 300 m.

3.3.1.4 Bulli Coal Seam

The Bulli Coal Seam is stratigraphically the top seam in the Illawarra Coal Measures and represents the majority of the coal reserves. The seam reaches depths of up to 800 m in the central north of the coalfield and is situated at more than 850 m below the surface in the north-west. To the north of the coalfield, the Bulli Coal Seam is 5 m at its thickest and in other regions varies in thickness between 2 to 3 m. The thicker sections of the Bulli Coal Seam occur in synclines and down-thrown fault blocks.

The Bulli Coal Seam consists of interbanded coal seams composed of dull and bright plies. In addition to the coal, minor claystone and siderite is present in the seam. The Bulli Coal Seam contains 8-9% ash, 21.5-27.5% volatile matter, 30-55% vitrinite, a high inertinite percentage (up to 55%) and a relatively low sulphur content.

The Bulli Coal Seam is a prime quality coking coal with medium to high ash and low to medium volatiles, with an average raw yield ranging from 70-85% and average of approximately 76%. The regional dip of the Bulli Coal Seam towards the north-west is about 2.5 degrees. Where igneous intrusive bodies occur near the Bulli Coal Seam, the economic potential has been decreased due to thermal alteration of the coal.

3.3.2 Existing Workings

Tahmoor Coal has extracted coal from the Bulli Coal Seam through the operation of Tahmoor Mine since 1979. Tahmoor Mine has included the following longwall series:

- Longwalls 1 to 9 – mined from 1987 to 1992, with widths from 170 m to 200 m (void width) and length up to 1640 m;
- Longwalls 10 to 21 – mined from 1992 to 2004, with widths from 230 m to 235 m (void width) and lengths up to 2675 m;
- Longwalls 22 to 32 – mined from 2005 to 2019, with widths from 283 m to 285 m (void width) and lengths up to 3580 m. This longwall series was orientated in a north-west to south-east direction, and progressively mined from west to east; and
- Longwalls West 1 to West 4 – mined from 2019 to 2022, with widths of 283 to 285 m (void width) and lengths up to 1875 m. These longwalls are located in the Western Domain and are orientated in a north to south direction, and progressively mined from west to east.

The workings typically comprise of a five heading mains development configuration and numerous two heading gate road developments to establish the main and tailgates for the corresponding headwalls. Long-term mains development pillars are designed to be long-term stable and not cause subsidence, resulting in serviceable roads for the life of the mine. Gate road pillars are designed to exceed one-tenth of the overburden depth and are serviceable up until extraction.

Workings for both development and secondary extraction are identified in **Figure 2** and the Graphical Plans as part of this Extraction Plan application.

LW S1A-S7A are located in the Tahmoor South Domain. The new series of longwalls exist to the south of the previously mined Longwalls 14-19 and to the west of Longwall 2 at Tahmoor Mine.

Tahmoor Mine shares the Southern coalfield with numerous operating and discontinued coal mines that also target the Bulli Coal Seam, although no workings are immediately adjacent to the Tahmoor leases. These mines include GM3's Bulli Seam Operations, Russell Vale Mine, and Cordeaux Mine. GM3's Dendrobium Mine is situated to the south-east of Tahmoor Mine and targets the deeper Wongawilli Coal Seam.

3.3.3 Proposed Mining Method

First workings (primary extraction or development mining) for LW S1A-S7A utilises continuous miners and shuttle cars to develop roadways that form the longwall panels. The two heading development roadways for LW S1A-S7A are typically extracted at 5.2 m wide and 2.7-2.8 m high by single pass continuous miners.

Development mining equipment required for first workings includes, but is not limited to:

- Continuous miners;
- Shuttle cars;
- Breaker feeders;
- Auxiliary fans;
- Graders;
- Underground personnel transporters; and
- Underground load haul dumps.

Second workings (secondary extraction or longwall mining) for LW S1A-S7A will utilise longwall retreat mining method to extract coal from the Bulli Coal Seam. Longwall mining is supported by continuous miner development operations. Each longwall panel will retreat in a direction away from the Central Mains Headings towards the 500 Mains Headings, nominally extracting from south to north.

Longwall mining equipment required for second workings includes, but is not limited to:

- Longwall shearer – to cut coal from the face of the seam;
- Face conveyor – to collect sheared coal and carry it to a coal sizer and stage loader;
- Panel conveyor – to transfer the coal to a trunk conveyor in one of the main headings; and
- Hydraulic roof supports – to temporarily hold up the roof strata to provide a working space for the shearing machinery and face conveyor. After each slice of coal is removed, the hydraulic roof supports, face conveyor and shearing machinery are moved forward and the roof immediately above the seam is allowed to collapse into the void that is left as the face retreats (the goaf).

ROM coal from Tahmoor Mine is conveyed to the surface via a series of conveyor belts and discharged to the ROM Stockpile area, where the coal is reclaimed and transferred to the Coal Handling Preparation Plant. At the plant, the ROM coal is processed by crushing, washing, sizing and dewatered and then transferred to the product coal stockpile by conveyor. Product Coal is reclaimed and transferred by conveyors to the Rail Load Out Bin, and then loaded into rail coal wagons for transport to either Port Kembla or the Port of Newcastle by rail.

Coal is mined from within the Bulli Coal Seam, producing hard coking coal for steel production. Product coal is marketed to Australian domestic, and export customers.

3.3.4 Mine Geotechnical Overview

3.3.4.1 Depth of Cover

The depth of cover over LW S1A-S7A ranges from between a minimum of approximately 365 m to a maximum of approximately 405 m (**Figure 6** (in masl)).

3.3.4.2 Roof Stata Characteristics

The immediate Bulli Coal Seam roof consists of an interbedded sandstone, siltstone and mudstone sequence of varying thickness, stratigraphically named the Wombarra Claystone. This sequence is overlain by the more thickly bedded Scarborough Sandstone.

Generally, the overburden for the 50 m of roof above the Bulli Coal Seam averages 60-80 Mpa. Roof strengths range typically 40-80 Mpa. The immediate 0.5 m roof strength is typically in the range 40-70 Mpa. The average strength of the 0-2 m horizon is generally stronger, ranging between 50-80 Mpa. The 2-8 m roof horizon ranges in strength from 60-90 Mpa.

Roof conditions vary with both the roof lithology and local stress conditions. Tahmoor Coal undertakes extensive roof monitoring, including roof sampling at specified locations.

3.3.4.3 Floor Strata Characteristics

The Bulli Coal Seam floor typically consists of carbonaceous mudstone grading into the coarser Loddon Sandstone sediments below. Floor strengths range typically 40-70 Mpa. In the current Tahmoor mining area, the immediate floor 0.2-0.5 m below the Bulli Coal Seam averages 50-80 Mpa.

Floor heave is commonly observed during development at Tahmoor Mine. Floor brushing is carried out, usually at least once, to provide adequate clearance within the first two weeks of mining. Typically, 0.5 m of floor is brushed in development roadways.

A laboratory strength range for the coal of the Bulli Coal Seam is about 15-20 Mpa.

3.3.4.4 Seam Dip

The Bulli Coal Seam has a gentle dip to the northeast, averaging 1.7°, although can range with dips up to 4° being recorded. This northeast dip is consistent to being positioned on the western arm of the Camden Syncline and western edge of the Sydney Basin.

The Bulli Coal Seam average gradient is 3-5% (i.e. 1 in 20) or from 8-15 m across the proposed longwall face width within the mining area of LW S1A-S7A.

3.3.4.5 Seam Thickness and Working Section

The main part of the Bulli Coal Seam at Tahmoor Mine is a consistent seam of bright and dull coal. The thickness of the Bulli Coal Seam section ranges from 1.82-2.07 m thick in LW S1A-S7A.

The Bulli seam geology (full) consists of a main Bulli Coal portion, underlain by a stone band (bedding parting) that typically varies in thickness between 0.05-0.2 m, which is further underlain by a poorer quality coal split which ranges in thickness from 0.1-0.3 m. The longwall working section in LW S1A-S7A plans to extract all three stratigraphic layers. Product yield is primarily driven by the proportionality of the

aforementioned layers within the working section.

3.3.4.6 Faulting

Faults and seam continuity have been interpreted from exploration drilling, extensive seismic surveys and underground mapping.

No faults have been identified within the LW S1A-S7A from underground workings by Tahmoor Coal.

Tahmoor south mining area is bounded by the Nepean fault to the east and the Central fault zone to the west (refer to **Figure 6**).

This system is the southern extension of the Lapstone Monocline, and at Tahmoor Mine, it consists of closely spaced sub-vertical en-echelon faults in a zone up to 400 m wide. The net displacement of the faults is approximately 30 m at Picton, diminishing to 10 m at Tahmoor North, and 3m in Tahmoor South. The Nepean Fault Zone is the only hydraulically charged geological structure encountered during mining to date.

3.3.4.7 Igneous Intrusions

Igneous intrusions are present throughout the broader Tahmoor Mine area and are typically identified to be north-west to south-east orientated when intersected in the workings. These bodies have presented as dykes with associated sill material, ranging from very strong fresh material to weak highly altered rock. In the eastern part of the mining leasehold, a plug, which is exposed at the surface, is considered to be present at Bulli Coal Seam level. This feature is external to current mine plans.

Within the southern mining domain, a small-scale igneous intrusion has been mapped and projected within the South 2 Mains Headings, immediately to the East of LW S1A. No further intrusions have been encountered through extensive inseam drilling conducted to date.

Regionally, to the south-east of the Tahmoor Mine leases, the Bulli Coal Seam is extensively intruded and/or cindered to the east of Bargo. The north-western limits of this intrusion partly encroach on the south-eastern part of the Tahmoor South Lease.

3.3.4.8 Seam Splitting

Seam splitting has been observed within underground workings, exploration drilling, gas drainage drilling and roadway development, and is described in **Section 3.3.4.5**.

3.3.4.9 Geotechnical Design Parameters

Chain pillars at Tahmoor Mine typically range between 35-40 m wide (solid), varying slightly with depth of cover. Pillar dimensions are consistent with double abutment chain pillar widths in the local mining district. Narrower chain pillars down to 25 m have been adopted where single sided abutment is planned. Similar dimensions have been adopted in the new mining domain of S1A-S7A.

Specific details of the proposed design parameters are provided in **Table 14.**

3.3.4.10 Stability of Underground Workings

The Coal Mine Roof Rating is routinely measured at Tahmoor Mine to characterise the immediate roof strata, and ranges between 40-55 in the Tahmoor South Domain.

Due to the laminated immediate roof, goafing is typically observed directly behind the shields. Large en-masse roof falls are not a feature of longwalling in the Bulli Coal Seam at Tahmoor Mine.

The Tahmoor Mine Hazard Plan summarises the main features affecting the longwall stability as:

- Roadway stability due to stress notching;
- Cross grades across the face; and

- Minor strike slip faulting.

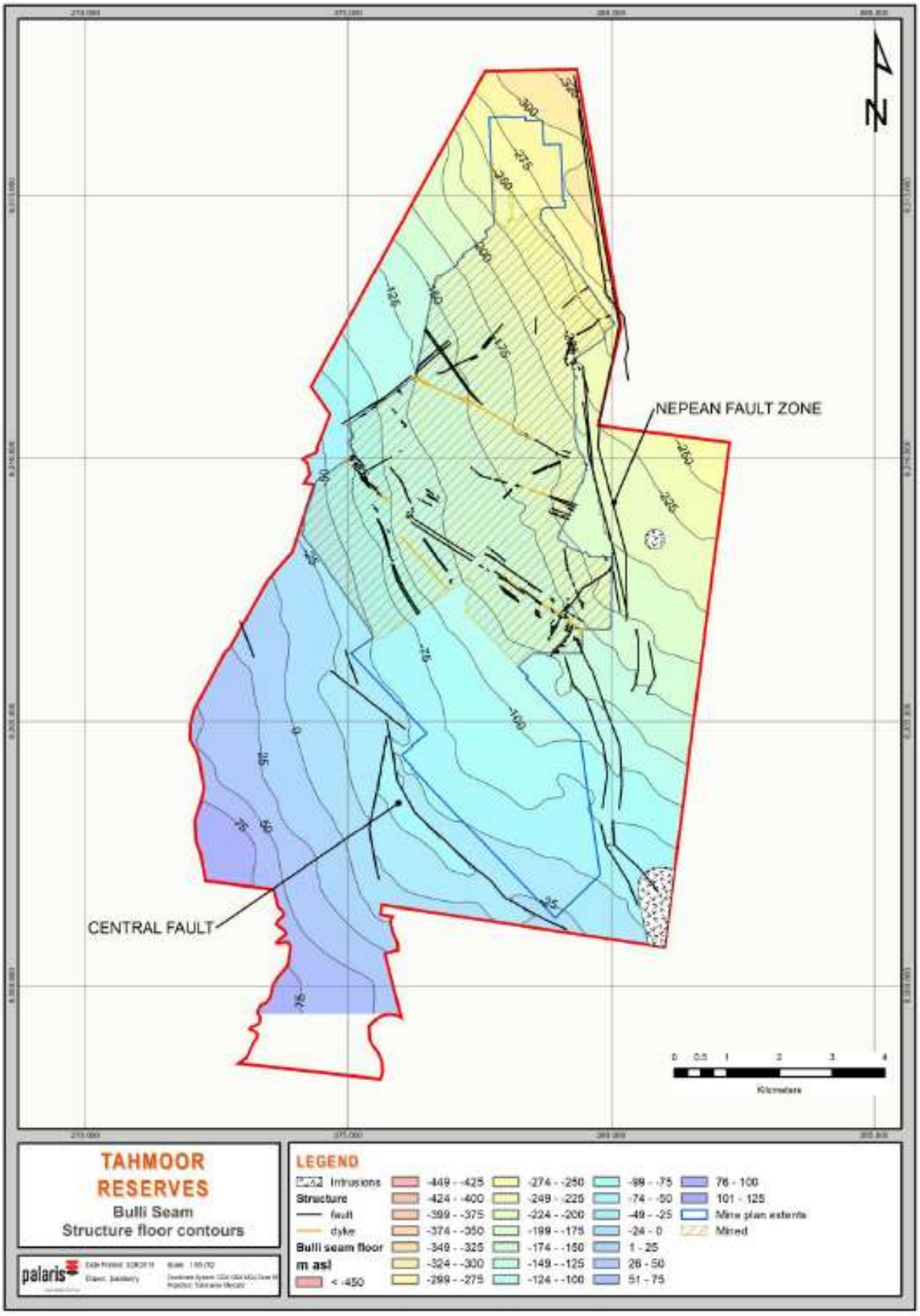

Figure 6 **Structure of the Bulli Coal Seam in the Tahmoor Mine Lease Areas (Palaris, 2019)**

3.3.5 Mine Geometry

3.3.5.1 Variations to the Original Mine Plan

As discussed in **Section 2.2.1,** the Tahmoor South Domain mine plan has been modified over time since the EIS submission in 2019, including modifications for each of the two amendment development applications.

Since development approval in April 2021, modifications to the Tahmoor South Domain mine plan have been applied to optimise development drivage and sequencing, and to maximise resource recovery within the constraints of available longwall equipment, features and boundaries. These minor adjustments include:

- Minor increases of longwall panel widths;
- Minor amendments to chain pillar widths;
- 'Squaring up' the headings to the south of the A series; and
- Minor adjustment to the commencement ends of the A series panels as a result of modification to the headings.

3.3.5.2 Current proposed Mine Plan

The current proposed mine plan for the Tahmoor South Domain is shown on **Figure 3**.

LW S1A-S7A are to be developed south of the 500 Mains Headings in an approximate north-south orientation and will be extracted from south to north. LW S1A was mined first, followed by LW S2A to LW S7A in a western progression. The layout for LW S1A-S7A is within the footprint of the Amended Extent of Longwalls as approved under the 2021 Development Consent (MSEC, 2022 and MSEC, 2024).

The dimensions of LW S1A-S7A are outlined in **Table 14**. Detailed mine layout drawings are provided in the Graphical Plans that form part of this Extraction Plan application.

The LW S1A-S6A panels will be 283 m (LW S1A) and 285 m (LW S2A–S7A) in width. The length of the longwalls will vary between 1,706 m for LW S1A and 1,994 m for LW S6A with LW S7A being 1918 m (excluding first workings). The overall void length is approximately 8 m greater than the longwall extraction length, owing to the installation headings. The mining height of the longwalls is anticipated to be between 2.1 m to 2.6 m.

Table 14 LW S1A-S7A Design Parameters

Longwall Panel Parameters	Units	LW S1A	LW S2A	LW S3A	LW S4A	LW S5A	LW S6A	LW S7A
ROM Coal Extracted	Tonnes	1,555,032	1,601,165	1,652,936	1,749,809	1,844,764	1,901,748	1,357,638
Gate Road Width	m	5.2	5.2	5.2	5.2	5.2	5.2	5.2
Gate Road Height	m	2.75	2.75	2.75	2.75	2.75	2.75	2.75
Maingate (MG) Chain Pillar Width	m	37.8	36	36	36	36	36	36
Tailgate (TG) Chain Pillar Width	m	90.4	37.8	36	36	36	36	36

Longwall Panel Parameters	Units	LW S1A	LW S2A	LW S3A	LW S4A	LW S5A	LW S6A	LW S7A
Pillar Width/Height Ratio		13.7	13.1	13.1	13.1	13.1	13.1	13.1
Tailgate (TG) Chain Pillar Length	m	119.8	119.8	119.8	119.8	119.8	119.8	119.8
Longwall Void Width	m	283	285	285	285	285	285	285
Longwall Extraction Width	m	272.6	274.6	274.6	274.6	274.6	274.6	180
Longwall Void Length	m	1714	1771	1811	1862	1952	2002	1918
Longwall Extraction Length	m	1706	1763	1803	1854	1944	1994	2026
Longwall Extraction Height	m	2.1-2.2	2.1-2.2	2.1	2.1	2.1	2.1-2.2	2.1-2.6
Coal Seam thickness	m	1.98	2.01	1.93	1.82	1.85	1.92	2.07
Minimum Depth of Cover	m	380	380	375	375	365	380	375
Maximum Depth of Cover	m	405	395	395	390	385	390	385

3.3.5.3 Mining Considerations and Hazards

A number of criteria and potential mining hazards have been taken into account during the design of the Tahmoor South mine plan. These items were:

- Seam access;
- Geological information and level of certainty;
- Access to shaft locations;
- Seam dip;
- Alignment with geological structure;
- Major horizontal stress;
- Depth of cover;
- Subsidence limits;
- Ventilation and gas drainage;
- Timing of government approvals;
- Number of development units required to support a highly productive longwall;
- Mains development requirement;

- Scoping accurate productivity levels;
- Frequency of longwall and development relocations; and
- Mine planning effectiveness.

Tahmoor Mine prepares mining and geotechnical hazard plan for each longwall in advance of mining.

3.3.6 Mine Schedule

An indicative mining schedule, as per the mining schedule prior to commencement, for development and secondary extraction of LW S1A-S7A is provided in **Table 15**.

Mining of LW S1A commenced on 18 October 2022, with LW S7A scheduled for completion in June 2028 (subject to operations). It is estimated that each longwall will be extracted in approximately 6 to 8 months.

The rate of longwall retreat is anticipated to range from 50-80 m per week, depending on geological conditions and support regime. Tahmoor Coal operates seven days a week, 24 hours a day on a roster basis.

Table 15 Mine Schedule for LW S1A-S7A (as per original schedule)

Longwall Panel	Start Date	Completion Date	Estimated Duration	Status
Longwalls South 1A (LW S1A)	18/10/2022	04/07/2023	259 days	Extraction completed
Longwalls South 2A (LW S2A)	02/08/2023	06/04/2024	248 days	Extraction completed
Longwalls South 3A (LW S3A)	8/05/2024	17/12/2024	193 days	Extraction completed
Longwall Panel	**Estimated Start Date**	**Estimated Completion Date**	**Estimated Duration**	**Status**
Longwalls South 4A (LW S4A)	01/01/2026	26/08/2026	237 days (7.8 months)	Scheduled
Longwalls South 5A (LW S5A)	25/09/2026	21/04/2027	208 days (6.9 months)	Scheduled
Longwalls South 6A (LW S6A)	21/05/2027	18/12/2027	211 days (6.9 months)	Scheduled
Longwalls South 7A (LW S7A)	17/01/2028	15/06/2028	150 days (4.8 months)	Scheduled

3.3.7 Resource Recovery

3.3.7.1 Coal Quality

Tahmoor Mine is a well-established and consistent metallurgical coal brand in the global marketplace that borders on being a hard coking coal. The Tahmoor Mine sells coking coal products to steel producers in Australian domestic market and export markets to European, Indian and Asian customers.

High quality coking coal is the primary product of the Tahmoor Mine. This product has a target ash of an average 9.3% with 8% product moisture. A higher ash coal is produced as a secondary product, which is washed to a target ash of 25% with a product moisture of 6%.

The geological definition of Tahmoor South coal has primarily been determined by the TBC series of boreholes from 2008-2010. Near term geological data is gained by a longwall block strip sampling regime and selective input of inseam exploration/gas drainage drill holes.

Coal Reserve for the Tahmoor South Domain mining area has been reported in accordance with the JORC Code, 2012. The reserves are estimated as of 31 December 2019 and generally reflect the mine design currently used for the Tahmoor South with the exception of minor alterations as described in **Section 3.3.5** and are outlined in **Table 16**.

Table 16 Coal Reserve Estimates

Reserve	Domain	Proved (Mt)
ROM Reserve	Tahmoor South Domain – LW S1A-S7A Bulli Coal Seam (5% M_{ROM})	10.4
Marketable Reserve	Coking Coal (8.5% M_{Prod}, 10% Ash)	6.3
	Secondary Coking Coal (6% M_{Prod}, 20% Ash)	0.4
	Total Product	6.6

3.3.7.2 Resource Recovery

The full seam ranges in thickness from 1.82 m - 2.07 m for LW S1A-S7A. Longwall equipment is able to cut at height of 2.15 m up to 2.6 m, therefore the full seam thickness will be mined. The total recoverable reserve from the extraction area is 7,570,054 tonnes for LW S1A-S7A. Expected longwall resource

recovery from LW S1A-S7A is presented in **Table 17**.

Table 17 Estimated Individual Panel Tonnages and Recovery (as per original schedule)

Longwall	ROM tonnes (t)	Coking Coal Product tonnes (t)	High Ash Secondary product tonnes (t)	Reject tonnes (t)	Yield (%)
LW S1A	1,572,027	1,008,346	65,319	498,362	68.3
LW S2A	1,618,664	1,004,247	71,720	542,697	66.5
LW S3A	1,671,001	1,021,598	62,130	587,273	64.9
LW S4A	1,768,933	1,033,279	53,152	682,502	61.4
LW S5A	1,864,925	1,096,971	61,103	706,851	62.1
LW S6A	1,922,532	1,127,953	66,707	727,873	62.1
LW S7A	1,357,638	860,630	36,899	460,109	66

3.3.7.3 Justification Statement

There are no significant environmental impacts anticipated, given the mine plan avoidance of sensitive areas and the ability for ongoing adaptive management, which will preclude longwall mining within the Extraction Plan Study Area. In addition, there are no significant subsidence impacts anticipated to surface infrastructure that cannot be mitigated prior to mining that will preclude longwall mining within the Extraction Plan Study Area.

The subsidence monitoring plan forming part of this Extraction Plan summaries the overall monitoring of mining impacts on both the natural environment and built features, with management actions and controls detailed within the relevant key sub-plans and subsidence management plans for built features.

Tahmoor Coal considers that the mine layout of LW S1A-S7A provides the most efficient resource recovery given the environmental and surface features constraints to mining. The extraction of the proposed longwalls has no detrimental impact on the potential to mine economically recoverable coal in the remainder of the lease areas.

3.4 Subsidence Predictions and Observations

3.4.1 Overview

Key parameters used in the description, prediction and assessment of surface movements resulting from underground mining are subsidence, tilt, strain, curvature, valley closure, and upsidence. A glossary of subsidence terms is provided in **Section 8.3** of this Extraction Plan Main Document.

As discussed in **Section 2.2.1**, the Tahmoor South Domain mine plan has undergone a series of changes since the original EIS submission was prepared in 2014.

Subsidence predictions for the extraction of LW S1A-S7A have been presented in the Subsidence Predictions and Impact Assessment Report by MSEC (2022; refer to **Appendix A** and 2024; refer to **Appendix B**). The following sections provide a summary of the information contained in the report (MSEC, 2022 and MSEC, 2024) to provide the maximum predicted conventional subsidence parameters resulting from the extraction of the proposed LW S1A-S7A in the Bulli Coal Seam.

The predicted subsidence, tilt and curvature have been obtained using the Incremental Profile Method, which has been calibrated for local conditions. The predicted strains have been determined by analysing the strains measured at Tahmoor Mine and other mines in the NSW Coalfields where the longwall width-to-depth ratios and extraction heights are similar to those for the proposed longwalls. A summary of subsidence predictions methods used to predict subsidence parameters for the extraction of LW S1A-S7A is provided in **Section 2.2.3** and are discussed in further detail in the Subsidence Predictions and Impact Assessment Report (MSEC, 2022; **Appendix A** and MSEC, 2024; **Appendix B**).

The maximum predicted subsidence parameters and the predicted subsidence contours describe and show the conventional movements. These predicted subsidence parameters do not include non-conventional movements such as valley related upsidence and closure movements, nor the effects of faults and other geological structures. Such effects have been addressed separately in the Subsidence Predictions and Impact Assessment Report for each environmental and built feature provided in Chapters 5 to 11 of **Appendix A** and Section 3 of **Appendix B.**

Subsidence impact predictions have been used in the various Key Sub-plans and associated documents to determine the appropriate management of the relevant environmental and built features. **Table 5** provides a summary of the environmental and built features considered and the relevant Key Sub-plans and associated documents that discuss and manage these features.

3.4.2 First Workings

The underground workings proposed are consistent with the proven success of the pillar geometries previously employed at Tahmoor Mine over a period of 35 years. Roof stratigraphy and floor conditions are well understood and controlled by the established roadway reinforcement systems. Coal strength, from the pillar stability point of view, is expected to be undiminished in the Extraction Plan Study Area and is complemented by rib bolting where necessary.

The parameters used for first workings at Tahmoor Coal Mine are width of 5.2 m and height of 2.7-2.8 m. The design parameters for first workings utilised at Tahmoor Mine are below the criteria for a High Risk Activity notification, as outlined within Schedule 3, Part 2, Clause 14 of the WHSMP Regulations.

The first workings for LW S1A-S7A are expected to be long term stable and non-subsiding in accordance with the requirements of Table 7 in Condition C1 and Condition C7 of SSD 8445. **Section 3.3.3** provides more details regarding first workings methodology.

First workings for LW S1A remain within the Tahmoor North Lease, for which DA 1975 applies. Under this development consent there are no requirements for first workings notifications. First workings for LW S1A commenced in April 2021.

Requirements for first workings notifications under the Tahmoor South development consent commences when LW S1A extraction starts (extraction of Longwall S1A commenced on 18 October 2022). A letter was sent prior to this commencement to the Resources Regulator with information on the first workings as required under Condition C7 of the Development Consent.

3.4.3 Subsidence Prediction

A summary of the maximum predicted values of incremental vertical subsidence, tilt and curvature resulting from the proposed LW S1A-S7A are provided in **Table 18**. The incremental parameters represent the additional movements due to the extraction of each of the proposed longwalls.

Table 18 Maximum Predicted Increment Conventional Subsidence, Tilt and Curvature for the Proposed LW S1A-S7A

Longwall	Maximum Predicted Incremental Vertical Subsidence (mm)	Maximum Predicted Incremental Tilt (mm/m)	Maximum Predicted Incremental Hogging Curvature (km^{-1})	Maximum Predicted Incremental Sagging Curvature (km^{-1})
LW S1A	800	7.0	0.08	0.22
LW S2A	950	7.5	0.08	0.22
LW S3A	950	8.0	0.09	0.22
LW S4A	950	8.0	0.09	0.22
LW S5A	950	8.0	0.10	0.22
LW S6A	975	8.3	0.09	0.23
LW S7A	1050	8.9	0.10	0.24

A summary of the maximum predicted values of total vertical subsidence, tilt and curvature resulting from the extraction of the proposed longwalls is provided in **Table 19**. The predicted total parameters represent the accumulated movements due to the extraction of all proposed longwalls within each of the mining areas. The predicted total vertical subsidence profiles are shown in **Figure A.01** of **Appendix B**.

Table 19 Maximum Predicted Total Conventional Subsidence, Tilt and Curvature for the Proposed LW S1A-S7A

Longwall	Maximum Predicted Total Conventional Subsidence (mm)	Maximum Predicted Total Conventional Tilt (mm/m)	Maximum Predicted Total Conventional Hogging Curvature (km^{-1})	Maximum Predicted Total Conventional Sagging Curvature (km^{-1})
LW S1A	800	7.0	0.08	0.22
LW S2A	1,000	8.0	0.10	0.22
LW S3A	1,200	8.0	0.10	0.22
LW S4A	1,250	8.5	0.13	0.22
LW S5A	1,350	9.0	0.14	0.22
LW S6A	1,350	9.5	0.14	0.24
LW S7A	1,400	10.0	0.14	0.25

The maximum predicted total vertical subsidence of 1,400 mm represents 63 % of the proposed mining height. The maximum predicted total tilt is 10.0 mm/m. The maximum predicted total curvatures are 0.14 km^{-1} hogging and 0.25 km^{-1} sagging, which represent minimum radii of curvature of 7.1 km and 4.1 km, respectively.

The predicted conventional subsidence parameters vary across the mining area. To illustrate this variation, the predicted profiles of conventional subsidence, tilt and curvature have been prepared along a prediction line, which are located as shown in **Figure A.01** of **Appendix B**.

3.4.4 Strain Prediction

For features that are in discrete locations, such as building structures, farm dams and archaeological sites, it is appropriate to assess the frequency of the maximum strains measured in individual survey bays.

3.4.4.1 Strain Measured in Survey Bays

The survey database has been analysed to extract the maximum tensile and compressive strains that have been measured at any time during the extraction of the previous longwalls at Tahmoor, Appin and West Cliff Collieries, for survey bays that were located directly above goaf or the chain pillars that are located between the extracted longwalls, which has been referred to as “above goaf”.

The 95 % confidence levels for the maximum total strains that the individual survey bays above goaf experienced at any time during mining were 0.9 mm/m tensile and 1.6 mm/m compressive. The 99 % confidence levels for the maximum total strains that the individual survey bays above goaf experienced at any time during mining were 1.4 mm/m tensile and 3.1 mm/m compressive.

The survey database has also been analysed to extract the maximum tensile and compressive strains that have been measured at any time during the extraction of the previous longwalls at Tahmoor, Appin and West Cliff Collieries, for survey bays that were located outside and within 200 m of the nearest longwall goaf edge, which has been referred to as “above solid coal”.

The 95 % confidence levels for the maximum total strains that the individual survey bays above solid coal experienced at any time during mining were 0.6 mm/m tensile and 0.5 mm/m compressive. The 99 % confidence levels for the maximum total strains that the individual survey bays above solid coal experienced at any time during mining were 0.0 mm/m tensile and 1.5 mm/m compressive.

3.4.4.2 Strain Measured along Whole Monitoring Lines

For linear features such as roads, cables and pipelines, it is more appropriate to assess the frequency of the maximum strains measured along whole monitoring lines, rather than for individual survey bays. That is, an analysis of the maximum strains measured anywhere along the monitoring lines, regardless of where the strain occurs.

A total of 42 of the 52 monitoring lines (i.e. 92 %) at Tahmoor, Appin and West Cliff Collieries had recorded maximum total tensile strains of 2.0 mm/m, or less. A total of 45 of the 52 monitoring lines (i.e. 87 %) at the mines had recorded maximum total compressive strains of 4.0 mm/m, or less.

3.4.4.3 Shear Strains

The 95 % and 99 % confidence levels for the maximum total horizontal mid-ordinate deviation that the individual survey marks located above goaf experienced at any time during mining were 20 mm and 35 mm, respectively.

3.5 Performance Measures and Indicators

3.5.1 Performance Measures

Performance objectives in relation to the subsidence impacts are outlined in SSD 8445. Performance measures relating to natural and heritage features are provided in Table 7 of SSD 8445 Condition C1, and are presented in **Table 6**. Performance measures relating to built features are provided in Table 8 of SSD 8445 Condition C3, and are also presented in **Table 6.** These objectives have been used when developing the management strategies incorporated in this Extraction Plan.

With regards to the subsidence performance measure discussed in **Table 6**, ‘negligible’ is defined as being ‘so small and insignificant as to not be worth considering’.

3.5.2 Performance Indicators

To establish compliance with the performance measures outlined in **Table 6**, Tahmoor Coal has developed subsidence and environmental monitoring programs in consultation with stakeholders as detailed in **Section 5** of this Extraction Plan, and within the key sub-plans.

Trigger Action Response Plans (TARP) have been developed as part of the monitoring of performance

indicators for the relevant management plans to establish an appropriate response if a performance measure is triggered. A 'Normal Condition' section is provided in each TARP to indicate that the environment is performing within normal levels or natural variability. Deviation from baseline or expected conditions triggers an increased level of risk to the environment (Level 1 or higher based on escalating corresponding risk). Each TARP provides a number of trigger levels based on the feature under observation, and each trigger is clearly defined with an appropriate action and response assigned for each risk level.

The TARPs are discussed further in **Section 3.6.2** and a Master TARP consolidating all the aspects is provided in **Appendix C**. TARPs associated with individual Subsidence Management Plans for built features will be / have been developed separately as part of their individual management plan, and will be / have been incorporated into the Master TARP.

3.6 Subsidence Management Strategies

Subsidence management at Tahmoor Mine follows the risk hierarchy approach of risk elimination (impact avoidance), substitution and mitigation, engineering controls, management and monitoring.

Subsidence management and mitigation strategies for each relevant environmental and built feature are described within the relevant management plans developed in support of the Extraction Plan outlined in **Section 4**. Further to detailed discussion in mine design (refer **Section 2.2**), the following sections provide addition discussion on impact avoidance measures, adaptive management processes, and contingency management using TARPs.

3.6.1 Avoidance

Impact avoidance (risk elimination) is the highest level of risk management control under the risk hierarchy and is the starting point for mine design wherever practicable.

There are two management strategies for avoiding or minimising the impacts to sensitive surface features as a result of mining. These are:

- Avoid mining under sensitive surface features; and/or
- Mine design under the sensitive surface features with a sub-critical void width.

As discussed in **Section 2.2**, the mine plan for LW S1A-S7A has been modified since the 2014 Original EIS submission. The numerous modifications of the Tahmoor South Domain mine plan have resulted in a reduction of the magnitude and extent of subsidence impacts, as well as avoidance of significant impact to sensitive surface features of the environment, including Aboriginal heritage items. This included the removal of LW 109 in February 2020, which was located directly beneath Dogtrap Creek and would have resulted in direct impacts to Aboriginal heritage items.

The current mine plan proposes to complete underground mining with access to the Tahmoor South Domain provided from the existing pit top facilities. This mine design consideration minimises surface impacts from mining through the avoidance of establishing new surface facilities.

3.6.2 Trigger Action Response Plans

Tahmoor Coal has developed TARPs for each relevant component management plan prepared to support the LW S1A-S7A Extraction Plan (refer to key sub-plans discussed in **Section 4** of this Extraction Plan). A Master TARP consolidating all aspects from the management plans is provided in **Appendix C**, and will be added to with TARPs from individual Subsidence Management Plans for built features once completed.

The TARPs have been developed using the performance indicators for subsidence impacts relevant to each component management plan. The TARPs outline the assigned level of risk for each performance measure. The 'Normal Condition' Level of each TARP indicates that, based on monitoring results, the environment is performing within normal levels. Where performance indicators indicate that a level of

risk has been triggered greater than a normal level (Levels 1 or higher with escalating corresponding risk), a response in the form of management / corrective management actions is required to be implemented as outlined in the TARP.

3.6.2.1 Implementation of Monitoring Program and TARP Requirements

Tahmoor Coal's standard approach for all monitoring, reporting, investigation and remediation is to commence all tasks as soon as practicable. The following sections provide more information on this standard approach to be adopted during the LW S1A-S7A pre-mining, mining and post-mining phases:

- All monitoring commitments will be tracked on a weekly basis so that tasks are completed as required, taking into consideration land access and environmental factors. Post-mining monitoring will typically be completed within one month of the completion of the relevant longwall and prior to the influence from the active subsidence zone on the feature from the next longwall.
- Following the receipt of monitoring data and laboratory results, specialist consultants will review the data against the relevant TARPs as soon as practicable. If any TARP trigger has occurred, specialist consultants will notify Tahmoor Coal as soon as practicable. Monitoring results and TARP triggers will also be discussed during the monthly Environmental Response Group meetings, and any relevant information from other disciplines will be shared within the group. It is noted that discussions amongst specialists from different disciplines will not be restricted to ERG meetings, and relevant specialists will be included at any time to discuss results and assist with the completion of required actions and responses, as required.
- In the event of a TARP trigger occurrence, Tahmoor Coal will initiate all requirements (actions and responses) in accordance with the relevant TARP (i.e. investigation, report, negotiation, CMA determination, or similar) as soon as practicable and endeavour to commence actions and responses within one month of the exceedance being recorded. This timeframe is noted to be subject to issues outside of Tahmoor Coal's control such as land access constraints, inclement weather, extended timeframes where further monitoring is required, and inability to communicate with a third party / landholder.
- Tahmoor Coal will complete the required actions and responses relating to the TARP trigger as soon as practicable and will endeavour to finalise these requirements, subject to issues outside of Tahmoor Coal's control, as follows:
    - Level 1 and Level 2 TARP trigger actions and responses within three months of the exceedance being recorded;
    - Level 3 and Level 4 TARP trigger actions and responses within six months of the exceedance being recorded; and
    - Exceeds Performance Measures actions and responses in accordance with the timeframes provided in the relevant TARPs.

The contingency plan in the event of an exceedance of performance indicators may include:

- Management actions;
- Corrective management actions;
- Preventative actions;
- Further investigations;
- Implementation of a Rehabilitation Management Plan; and/or
- Implementation of a Corrective Action Management Plan (CAMP).

If a CAMP is required in accordance with the TARP, this document will be prepared in consultation with key Government agencies. The CAMP will include the following key elements:

- Investigation of the impact and root cause analysis;
- Review of monitoring data and extent of environmental consequences;
- Technical review into remediation methodology options;
- Establishment of remediation success criteria;
- Development of remediation strategy;
- Development of post-remediation review; and
- Project management administration, controls, scheduling and reporting.

The success of remediation measures that has been implemented for any TARP exceedance would be reviewed as part of any CAMP and the Annual Review (refer to **Section 7.1.2**).

3.6.3 Adaptive Management Strategies

3.6.3.1 Continuous Improvement

Tahmoor Coal have adopted the "Plan-Do-Check-Act" model as shown in **Figure 7**. This model will be applied to all aspects of Tahmoor Coal's environmental management and is utilised to embed the continuous improvement process in all system documents.

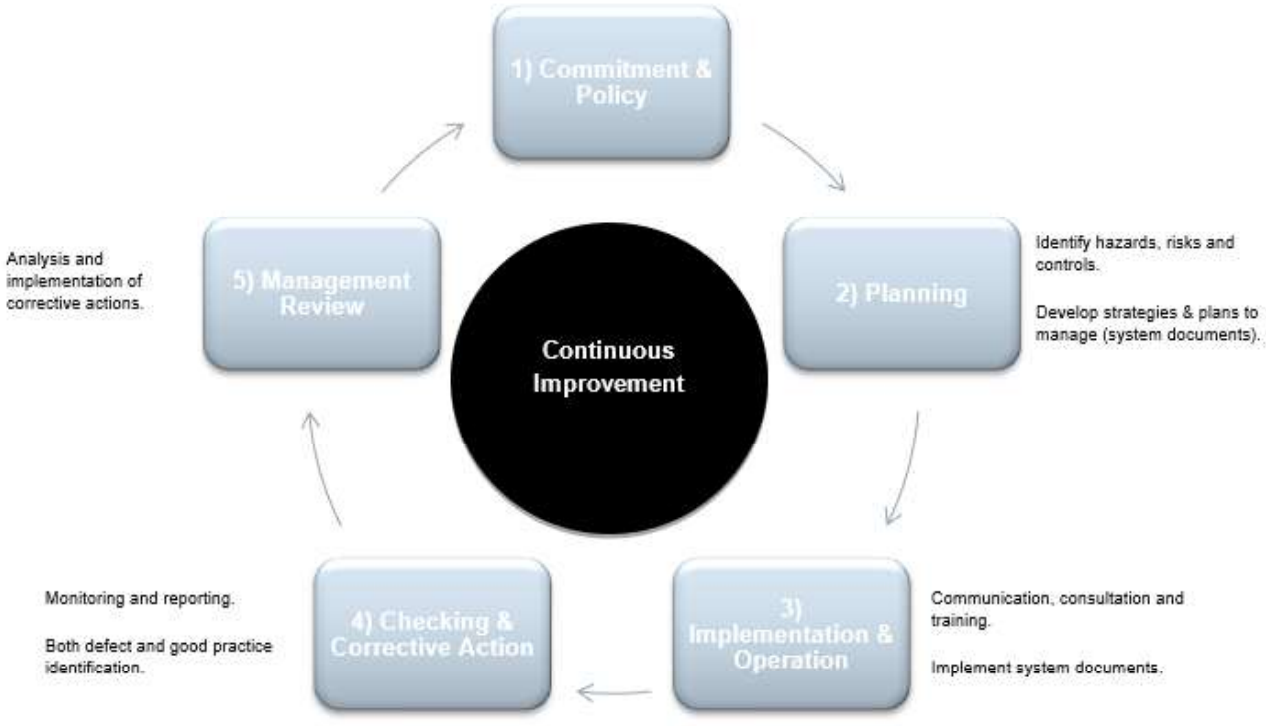

Figure 7 Continuous Improvement Model

3.6.3.2 Effectiveness of Management Measures

The effectiveness of the management measures presented in each of the key sub-plans will be validated periodically via comparison of monitoring results with modelled predictions. Re-calibration will occur as necessary, and an independent review of the model will occur every three years.

3.6.3.3 Adaptive Management Strategy - Review of Mine Plan for Built Features

Adaptive management measures for the reduction of impact to environmental features is not proposed for the extraction of LW S1A-S7A. However, a number of built features may benefit from adaptive management strategies, as discussed below.

An Adaptive Management Strategy is proposed to review mining-induced ground movements, subsidence impacts and environmental consequences to three properties / infrastructure during the mining of the following longwalls:

- Wollondilly Anglican College - In the extremely unlikely event that severe impacts develop, it would be possible to pause longwall extraction as it approaches the school to ensure that the school remains safe, serviceable and operational during and after the proposed mining;
- Picton Weir - As Tahmoor Mine will progressively approach the Picton Weir, it will be possible to review observations during the mining of each longwall and adjust the mine plan, if necessary to reduce the potential for impacts on Picton Weir. Picton Weir is also located beyond the finishing ends of the longwalls and it will be possible to stop the longwall during mining, if necessary based on actual observations during mining; and
- Wellers Road Overbridge - As Tahmoor Mine will progressively approach the Wellers Road Overbridge, it will be possible to review observations during the mining of each longwall and adjust the mine plan, if necessary to reduce the potential for impacts on the Overbridge.

According to the Adaptive Management Strategy, if impacts to built features listed above were greater than anticipated, Tahmoor Coal would review amending the commencing / finishing positions of the longwalls in question to reduce the potential for impacts on these built features.

If it was determined that the current start / finishing positions of these longwalls is likely to result in an exceedance of the subsidence impact performance measure for these built features, detailed analysis would be undertaken to determine if a modification of the longwall(s) is likely to result in an exceedance of the subsidence performance measures. If a setback is likely to reduce the likelihood of an exceedance occurring, modification of the longwall(s) would be determined. This process would be completed by re-generating the subsidence model for the relevant longwall to include observed subsidence measurements, and generating potential subsidence predictions for defined incremental changes to future longwall(s) from the built feature in question.

3.6.3.4 Adaptive Management Strategy - Review of Mine Plan for Heritage Features

If extraction of LW S1A-S7A indicates that an environmental consequence has occurred to the heritage significance of Rockshelter Sites 52-2-4471, 52-2-4975, 52-2-4976, 52-2-4977, 52-2-4978, 52-2-4982, 52-2-4981 (and a Level 2 of TARP HMP1 has been triggered), Tahmoor Coal would review the impacts that occurred to the rockshelter sites and also review the experiences that were observed at other non-heritage rockshelters during the mining of LW S1A-S7A. If the review indicates that impacts on Aboriginal sites above the B Series longwalls are likely to be greater than predicted in the EIS, Tahmoor Coal will review the mine design and determine whether some longwall panels should be setback further to avoid directly mining beneath other rockshelter sites.

3.6.4 Strategy for Continuous Improvement to the Aquatic Monitoring Program

The BACI designed aquatic monitoring program will be evaluated each season and adapted where required to account for prevailing environmental conditions. To date, the baseline aquatic monitoring program has been adapted to account for consistently dry creek beds at sampling locations and to avoid collecting data where other environmental variables would confound results. Monitoring reports will identify any limitations and improvements that could be made to the program including additional sites and analyses that could be incorporated.

3.6.5 Strategy for Continuous Improvement to the Riparian and Amphibian Monitoring Program

The BACI designed terrestrial monitoring program will be evaluated each season and adapted where required to account for prevailing environmental conditions. To date, the baseline amphibian monitoring program has been adapted to account for the potential decline in amphibian populations within watercourses of the Study Area. The program currently collects watercourse parameters associated with sensitive amphibian habitat areas and accounts for total frog species richness and abundance.

Riparian monitoring focuses on signs of riparian vegetation dieback. To date, the program obtains data on flora species richness, floristic cover, prevalence of exotic species, and other anecdotal information (e.g., visual shifts in vegetation assemblages, evidence of post-fire recovery, stochastic events [flooding], and above surface human disturbance). Monitoring reports will identify any limitations and improvements that could be made to the program including additional sites and analyses that could incorporated.

4 Key Sub-Plans

4.1 Overview of Environmental Management

4.1.1 Environmental Management Strategy Framework

The Tahmoor Environmental Management System (EMS) Framework provides the strategic context for the environmental management of Tahmoor Coal and forms part of the broader Health, Safety, Environment and Community (HSEC) management systems at Tahmoor Coal. The EMS outlines how Tahmoor Coal manages environment and community (E&C) aspects, impacts and performance. It provides a framework for the standards, plans and procedures implemented to ensure operations are managed in accordance with the ISO:14001 principles.

The objectives of the EMS are:

- To provide an overall framework for environmental management at Tahmoor Mine utilising the principles of ISO:14001;
- To ensure compliance with all development consent, licences and approvals at Tahmoor Mine;
- To detail the relationship and interactions between various operational and environmental components at Tahmoor Mine;
- To provide effective mechanisms for external communications, maintaining a relationship with the local community; and
- To assist Tahmoor Coal employees and contractors in administering their responsibilities regarding environmental management.

This Extraction Plan will be implemented in conjunction with the EMS framework. **Figure 8** provides an overview of the EMSF and the documents which are part of the strategic framework for environmental management at Tahmoor Mine.

4.1.2 Overview of Key Sub-plans of this Extraction Plan

The overall framework for subsidence monitoring and management of impacts of this Extraction Plan is provided in the Subsidence Monitoring Plan for this Extraction Plan. This document outlines the monitoring program for the measurement of actual subsidence, and the inspection program for environmental consequences of subsidence to compare against predicted impacts to determine if actions have been triggered.

The Extraction Plan is supported by a set of individual management plans intended to manage particular environmental or built features within the Extraction Plan Study Area. The individual management plans, which have been prepared to specifically address Condition C8 of SSD 8445, include:

- Water Management Plan – to manage potential environmental consequences to surface water and groundwater as a result of secondary extraction;
- Land Management Plan – to manage potential environmental consequences to landscape features and agricultural enterprises as a result of secondary extraction;
- Biodiversity Management Plan – to manage potential environmental consequences to aquatic and terrestrial biodiversity as a result of secondary extraction;
- Heritage Management Plan – to manage potential environmental consequences to Aboriginal and historical heritage as a result of secondary extraction;
- Built Features Management Plan – to manage potential environmental consequences to built

feature as a result of secondary extraction. A number of sub-plans are currently in preparation to manage potential environmental consequences to built features as a result of secondary extraction; and

- Public Safety Management Plan – to ensure public safety in the Extraction Plan Study Area.

If a subsidence impact or environmental consequence occurs, the required action(s) are provided in the master TARP in **Appendix C** or the individual management plan to which the trigger refers to.

Figure 8 provides an overview of the environmental management plans and other environmental management documents that have been prepared to manage environmental impact resulting from LW S1A-S7A extraction.

Table 5 provides a summary of environment and built features within the Extraction Plan Study Area and in which key sub-plans they are managed. The location of these features is illustrated in Appendix F of the Subsidence Predictions and Impact Assessment Report (MSEC, 2022;**Appendix A**) and Appendix B of Modification 3 Longwall S7A subsidence predictions and impact assessment (MSEC, 2024; **Appendix B**)**.**

It should be noted that:

- All environmental and built features are discussed in the Subsidence Prediction and Impact Assessment Report (MSEC, 2022; **Appendix A** and MSEC, 2024; **Appendix B**);
- All monitoring measures for these features are summarised in the Subsidence Monitoring Plan; and
- The Built Features Management Plan is an umbrella document for the management of built features, and a number of sub-plans are currently in preparation to manage potential environmental consequences to built features as a result of secondary extraction.

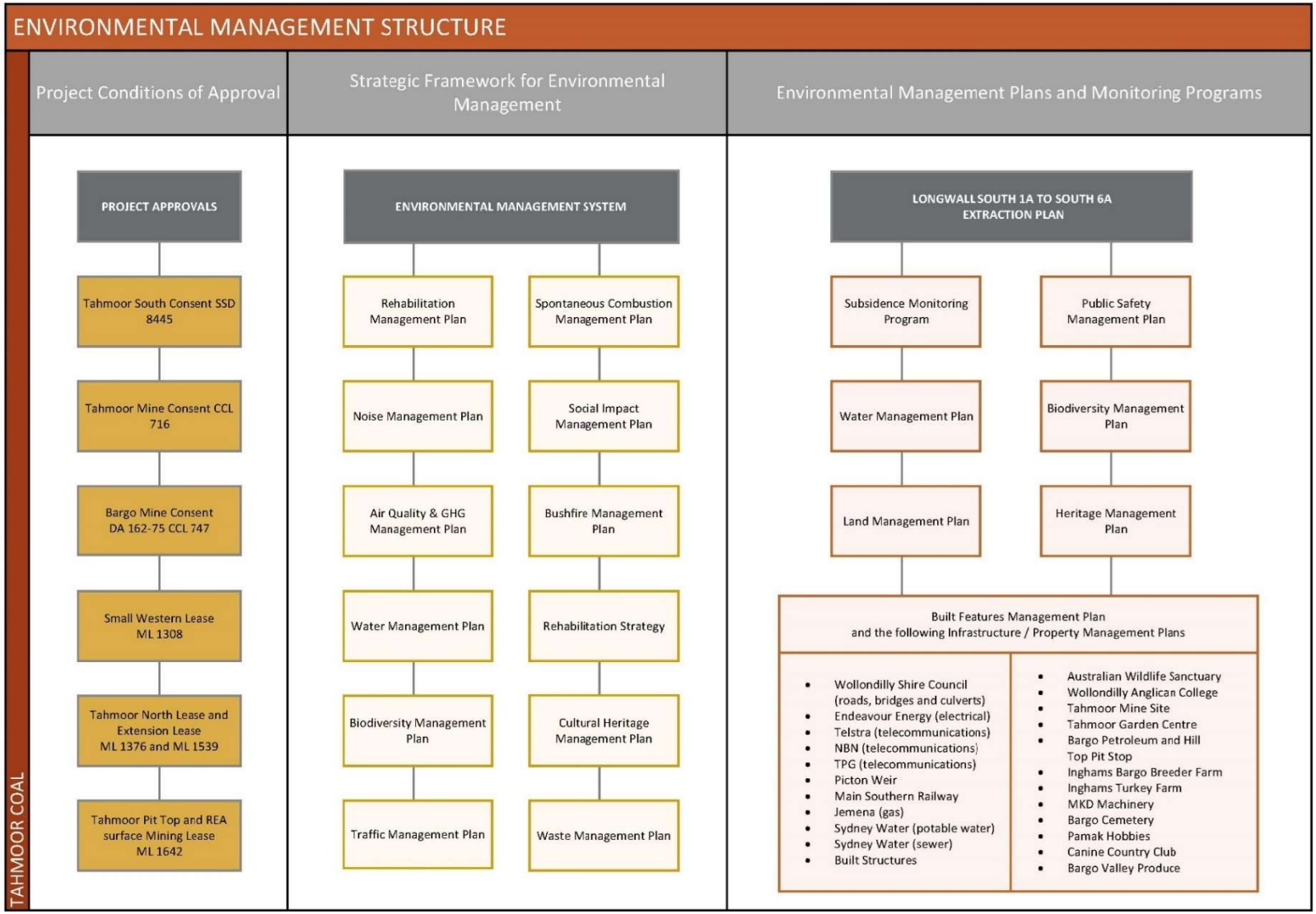

Figure 8 Overview of Environmental Management Structure for Tahmoor Coal

4.2 Water Management Plan

A WMP for LW S1A-S7A has been prepared and updated to identify the monitoring and management measures for surface water and groundwater resources within the Extraction Plan Study Area that are required to be implemented to demonstrate that the relevant performance measures are achieved. The WMP focused on watercourses and groundwater. The Study Area is located predominantly within the Teatree Hollow catchment, which is a sub-catchment of the Bargo River. Small portions of the Study Area and 600 m buffer are also located within the Hornes Creek, Dogtrap Creek and Bargo River catchments.

The WMP was prepared to address the requirements listed in Condition C8(g)(iii) of SSD 8445 (refer to Table 1 of the WMP), the *Extraction Plan Guideline* (DPE, 2022), and regulatory requirements (refer to Section 2.2 of the WMP). The WMP was prepared in consultation with former Departments EES, DPE Water, Crown Lands, WaterNSW, and WSC (refer to **Section 2.1.3**).

The WMP provides information on (but not limited to) the following:

- Baseline data for surface water (water level, streamflow and water quality), and groundwater levels (Section 3 of the WMP);
- Predicted subsidence impacts and environmental consequences to surface water and groundwater resources (Section 4 of the WMP);
- Performance measures and performance criteria for surface water and groundwater (Section 5.1 of the WMP);
- Surface water monitoring measures relating to pool water level, streamflow, stream water quality, and channel and bank stability (Section 5.2 of the WMP);
- Groundwater monitoring measures relating to groundwater level and water quality (Section 5.2 of the WMP);
- Water management measures for surface water and groundwater resources (Section 6.2 of the WMP); and
- TARPs to be implemented to manage and protect surface water and groundwater resources (Appendix A of the WMP).

Watercourses within the LW S1A-S7A Study Area are identified on **Figure 9**. A summary of water monitoring measures is provided in **Section 5.3**, and surface water and groundwater TARP actions are consolidated in **Appendix C**.

The following documents were prepared to support the WMP:

- Groundwater Impact Assessment (SLR, 2024) – provides details of baseline data, monitoring and management measures, and TARPs for groundwater resources in the LW S1A-S7A Study Area; and
- Baseline Private Bore Assessment (SLR, 2022a) – provides a description of existing private groundwater bores in the Study Area, bore yields and serviceability of accessible bores, groundwater quality from accessible bores.

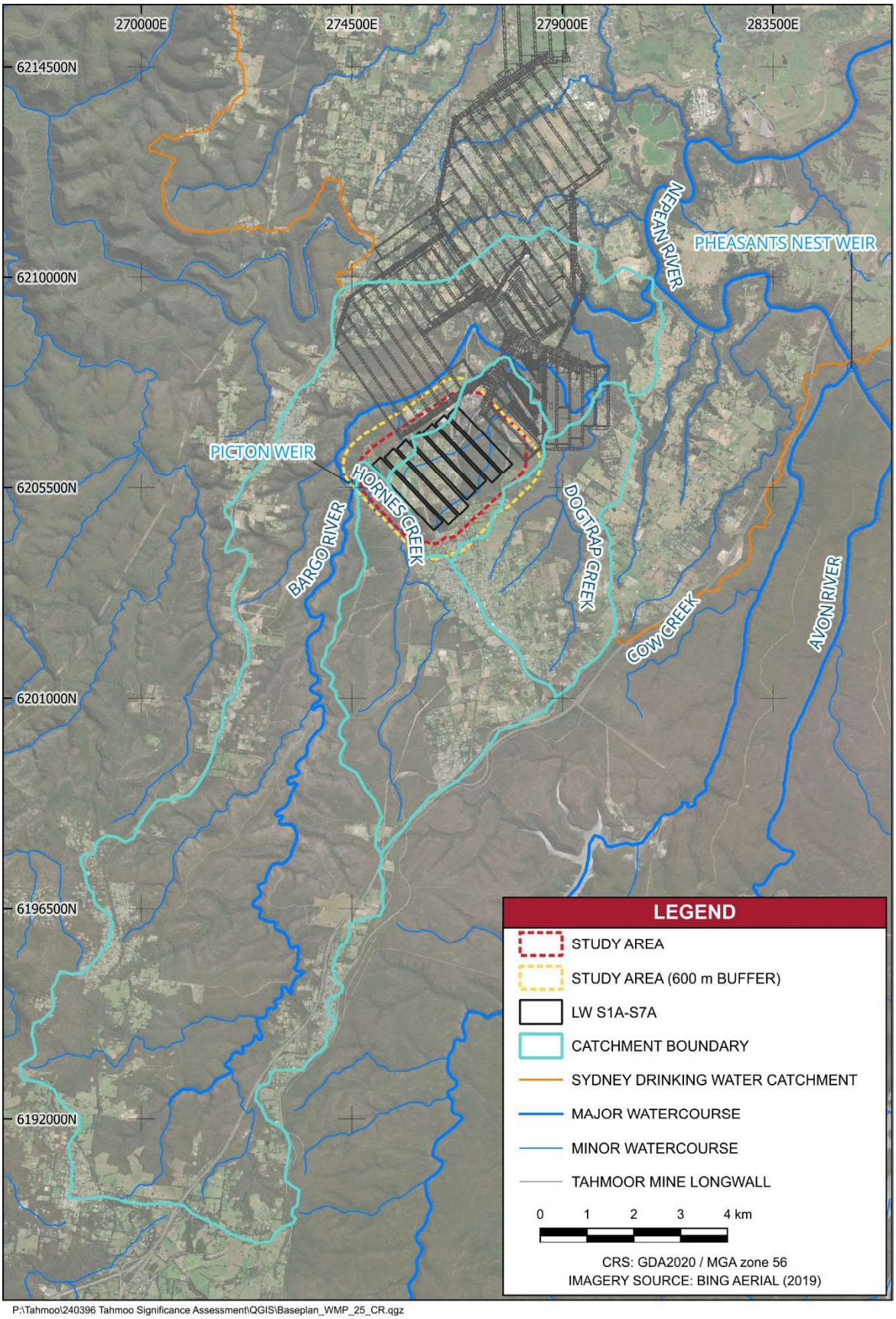

Figure 9 **Study Area Surface Water Resources (ATC Williams, 2025)**

4.3 Land Management Plan

A LMP for LW S1A-S7A has been prepared and updated to identify the monitoring and management measures for landscape features and agricultural resources within the Extraction Plan Study Area that are required to be implemented to demonstrate that the relevant performance measures are achieved. The LMP focused on cliffs, natural steep slopes, farm dams and agricultural enterprises.

The LMP was prepared and updated to address the requirements listed in Condition C8(g)(v) of SSD 8445 (refer to Table 2 of the LMP), the DPE *Extraction Plan Guidelines* (DPE, 2022), and other regulatory requirements (refer to Section 2 of the LMP). The LMP was prepared in consultation with former Departments DPI Agriculture and DPE Crown Lands (refer to **Section 2.1.3**).

The LMP provides information on (but not limited to) the following:

- Baseline data for landscape features and agricultural enterprises (Section 3 of the LMP);
- Predicted subsidence impacts and environmental consequences to landscape features and agricultural enterprises (Section 4 of the LMP);
- Performance measures and performance criteria for landscape features (Section 5.1 of the LMP);
- Monitoring measures for landscape features (Section 5.2 of the LMP);
- Management measures for landscape features (Section 6.2 of the LMP); and
- TARPs to be implemented to manage landscape features (Appendix A of the LMP).

Cliffs and natural steep slopes within the LW S1A-S7A Study Area are identified on **Figure 10**. A summary of landscape and agricultural monitoring measures is provided in **Section 5.3**, and landscape TARP actions are consolidated in **Appendix C**.

The following document was prepared to support the LMP:

- Geotechnical Assessments (Douglas Partners, 2024 and PSM, 2025) – provides an overview of steep slopes and dams in the Study Area, as well as an assessment of likely impacts to these features and impacts to built features as a result of LW S1A-S7A extraction; and
- Land and Agricultural Resource Assessment (SLR, 2022b and SLR, 2025) – provides an overview of the landscape, land and soil capability, and agricultural enterprises in the Study Area, as well as an assessment of likely impacts to these features as a result of LW S1A-S7A extraction.

Potential risks to constructed steep slopes along road embankments and cuttings are managed separately in accordance with the Wollondilly Shire Council Management Plan. Potential risks to constructed steep slopes along railway embankments and cuttings are managed separately in accordance with the Main Southern Railway Management Plan. Potential risks to constructed steep slopes and dams at the Tahmoor Mine site are managed in accordance separately with the Tahmoor Mine Site Management Plan.

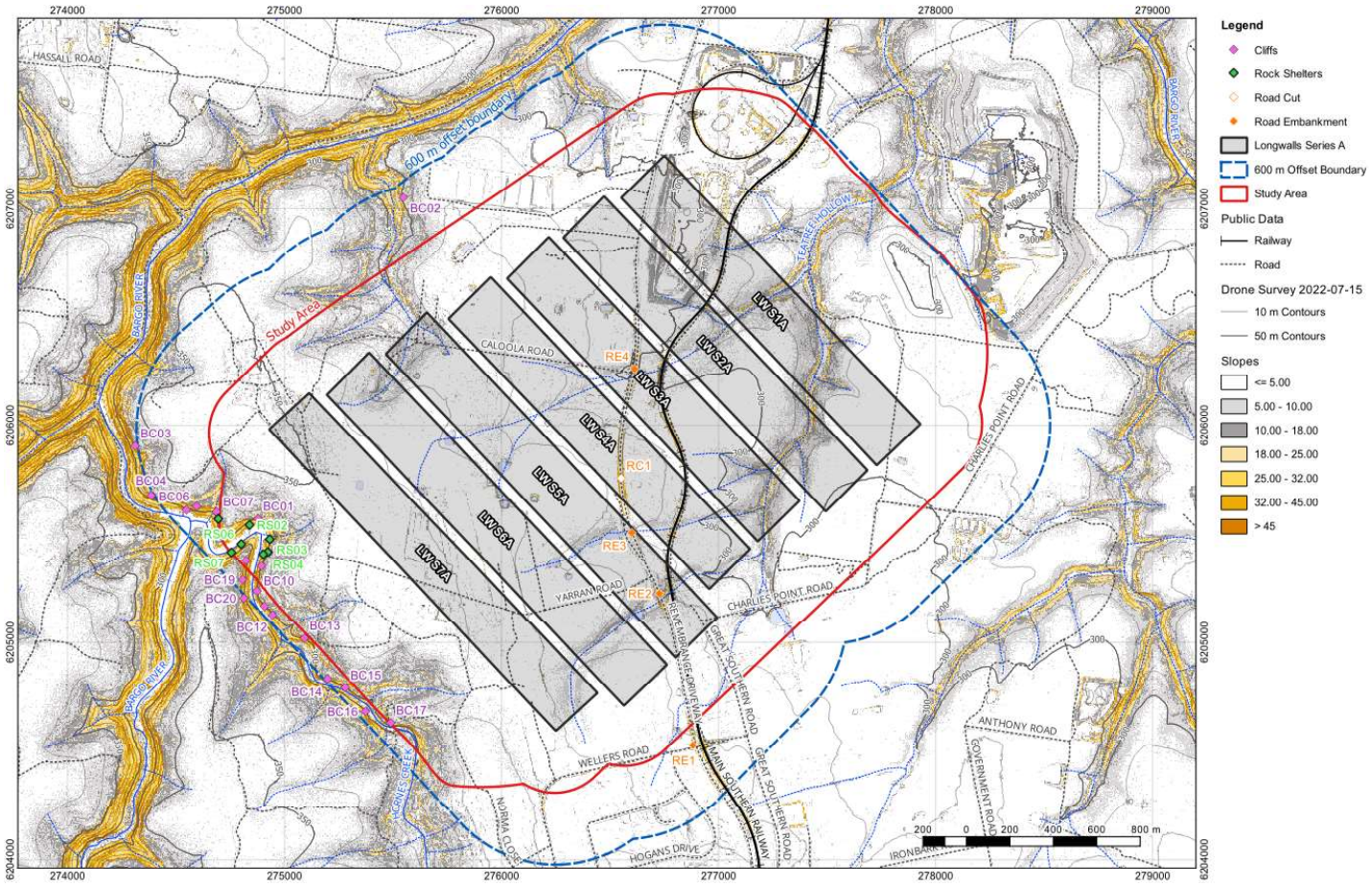

Figure 10 Cliffs and Steep Slopes in the LW S1A-S7A Study Area (PSM, 2025)

4.4 Biodiversity Management Plan

A BMP for LW S1A-S7A has been prepared and updated to identify the monitoring and management measures for aquatic and terrestrial biodiversity within the Extraction Plan Study Area that are required to be implemented to demonstrate that the relevant performance measures are achieved. The BMP focused on aquatic and terrestrial biodiversity, with particular focus on threatened species, populations and their habitats, and Endangered Ecological Communities (EECs) and water dependent ecosystems.

The BMP was prepared to address the requirements listed in Condition C8(g)(iv) of SSD 8445 (refer to Table 2 of the BMP), the DPE *Extraction Plan Guidelines* (DPE, 2022), and regulatory requirements (refer to Section 2 of the BMP). The BMP was prepared in consultation with former Departments EES, Crown Lands, and Wollondilly Shire Council (refer to **Section 2.1.3**).

The BMP provides information on (but not limited to) the following:

- Baseline data for terrestrial vegetation communities (including threatened ecological communities, riparian vegetation, and vegetation condition), threatened flora and fauna and communities, watercourses and stream morphology, aquatic biodiversity (Section 3 of the BMP);
- Predicted subsidence impacts and environmental consequences to aquatic and terrestrial biodiversity (Section 4 of the BMP);
- Performance measures and performance criteria for aquatic and terrestrial biodiversity (Section 5.1 and 5.2 of the BMP);
- Biodiversity monitoring measures relating to aquatic biodiversity (water quality, aquatic habitats, macroinvertebrates) and terrestrial biodiversity (amphibian and riparian vegetation) (Section 5.3 of the BMP);

- Biodiversity management measures for aquatic and terrestrial biodiversity (Section 6.2 of the BMP); and
- TARPs to be implemented to manage and protect aquatic and terrestrial biodiversity (Appendix A of the BMP).

A summary of biodiversity monitoring measures is provided in **Section 5.3**, and biodiversity TARP actions are consolidated in **Appendix C**.

A number of threatened species and one TEC were recorded, or potentially recorded, within the Study Area during the monitoring surveys:

- *Pomaderris brunnea (*Brown Pomaderris), *Grevillea parviflora* subsp. *parviflora*, *Persoonia bargoensis, and Persoonia glaucescens* (Mittagong Geebung) – Threatened flora species in the Study Area;
- Twelve threatened fauna species recorded within or near the Study Area, as well as the Giant Burrowing Frog and Red-crowned Toadlet recorded at Cow Creek and Hornes Creek. However, no threatened amphibian species have been detected during the baseline monitoring; and
- Shale Sandstone Transition Forest in the Sydney Basin Bioregion – Threatened Ecological Community confirmed in the Study Area.

4.5 Heritage Management Plan

A HMP for LW S1A-S7A has been prepared and updated to identify the monitoring and management measures for Aboriginal and historical heritage items within the Extraction Plan Study Area that are required to be implemented to demonstrate that the relevant performance measures are achieved. The HMP focused on Aboriginal and historical heritage items listed on heritage databases, and Aboriginal and historical heritage items identified in the Study Area during site investigations.

The HMP was prepared and updated to address the requirements listed in Condition C8(g)(vi) of SSD 8445 (refer to Table 1 of the HMP), the DPE *Extraction Plan Guidelines* (DPE, 2022), and regulatory requirements (refer to Section 2 of the HMP). The HMP was prepared in consultation with former Departments DPE, EES, Heritage NSW, Wollondilly Shire Council, and RAPs (refer to **Section 2.1.3**).

The HMP provides information on (but not limited to) the following:

- Baseline data for Aboriginal and historical heritage items (Section 3 of the HMP);
- Predicted subsidence impacts and environmental consequences to Aboriginal and historical heritage items (Section 4 of the HMP);
- Performance measures and performance criteria for Aboriginal and historical heritage items (Section 5.1 of the HMP);
- Aboriginal and historical heritage monitoring measures (Section 5.2 of the HMP);
- Management measures for Aboriginal and historical heritage items (Section 6.2 of the HMP); and
- TARPs to be implemented to manage and protect Aboriginal and historical heritage (Appendix A of the HMP).

Aboriginal and historical heritage items located within the LW S1A-S7A Study Area are identified on **Figure 11 and Figure 12**. A summary of heritage monitoring measures is provided in **Section 5.3**, and heritage TARP actions are consolidated in **Appendix C**.

The Study Area encompasses nine Aboriginal heritage sites and four historical heritage sites (refer to **Figure 11**):

- Aboriginal heritage sites:

- Isolated find: TC14-2-19 (AHIMS 48-2-0275);
- Artefact scatter: Remembrance Drive 2013.1 (AHIMS 52-2-3968);
- Rockshelter with art and stone artefacts: Teatree Hollow 2013.1 (AHIMS 52-2-4471);
- Rockshelter with deposit and stone artefacts: Hornes Creek RS2 (AHIMS 52-2-4975);
- Rockshelter with deposit: Hornes Creek RS3 (AHIMS 52-2-4976);
- Rockshelter with deposit and stone artefact: Hornes Creek RS4 (AHIMS 52-2-4977);
- Rockshelter: Hornes Creek RS5 (AHIMS 52-2-4978);
- Rockshelter with deposit and stone artefact: Hornes Creek RS6 (AHIMS 52-2-4982);
- Rockshelter with deposit: Hornes Creek RS7 (AHIMS 52-2-4981).

- Historical heritage sites:
  - Wirrimbirra Sanctuary (known as the Australian Wildlife Sanctuary) [SHR and WLEP];
  - Bargo Cemetery (WLEP);
  - Part of the Great Southern Road (non-statutory listed); and
  - Tahmoor Colliery (known as the Tahmoor Mine Site) (non-statutory listed).

One locally listed heritage item, Railway Bridge North (also known as Wellers Road Overbridge), is located within the 600 m buffer from extraction that could be susceptible to far-field or valley related movements. In addition, three heritage items, AHIMS #52-2-4980 (Hornes Creek GG1), Picton Weir (WLEP) and Bargo Railway Viaduct (WLEP and SHR), are located outside the 600 m buffer but could also be susceptible to far-field or valley related movements.

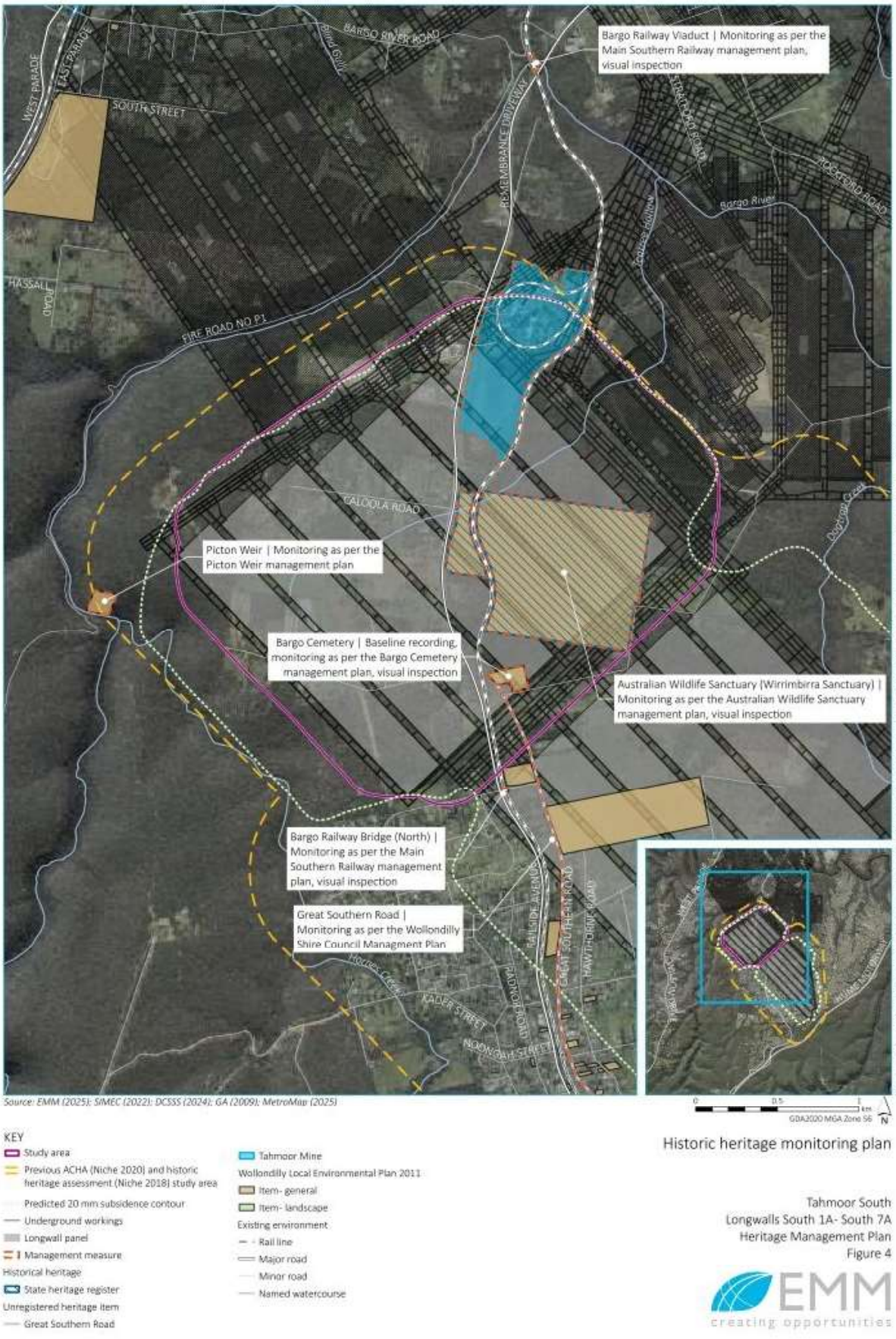

Figure 12 Historical Heritage Sites in the LW S1A-S7A Study Area (EMM, 2025)

4.6 Built Features Management Plan

A Built Features Management Plan (BFMP) for LW S1A-S7A has been prepared and updated to identify the monitoring and management measures for all built features within the Extraction Plan Study Area that are required to be implemented to demonstrate that the relevant performance measures are achieved. The BFMP focused on the management of infrastructure (electrical, potable water, sewer, gas, telecommunications, roads, culverts, bridges, rail, Picton Weir, and survey control marks), structures for industrial, commercial and business, rural properties and structures (built structures, pools, septic tanks, and farm dams), and historical heritage (e.g. Bargo Cemetery, Australian Wildlife Sanctuary, Wellers Road Overbridge).

The BFMP provides information on the key built features within the Study Area and which Subsidence Management Plan to refer to with regards to monitoring and management of potential subsidence-related impacts for each built feature resulting from the extraction of LW S1A-S7A. Built features within the LW S1A-S7A Study Area are also identified in Sections 6-11 of the Subsidence Predictions and Impact Assessment Report (MSEC, 2022; refer to **Appendix A** of this document) and Section 3 of Modification 3 - Longwall S7A - Subsidence Predictions and Impact Assessment Report (MSEC, 2024); refer to **Appendix B** of this document).

The BFMP was prepared to address the requirements listed in Condition C8(g)(ii) of SSD 8445 (refer to Table 1 of the BFMP), the DPE *Extraction Plan Guidelines* (DPE, 2022), the *Managing Risks of Subsidence Guide: WHS (Mines and Petroleum Sites) Legislation* (Resources Regulator, 2017), and other regulatory requirements (refer to Section 2 of the BFMP). The BFMP was prepared in consultation with the Resources Regulator, TfNSW, and WSC (refer to **Section 2.1.3**).

A number of sub-plans for individual built features (Subsidence Management Plans), as summarised in **Table 5,** have been/are being prepared. Each sub-plan includes a summary of potential risks, impact predictions and assessment, appropriate management and monitoring measures, and a detailed TARP for the built feature. The contents of each sub-plan will be prepared in consultation with the built feature owners and other relevant stakeholders. Following approval and signature by the built feature owner, each sub-plan will be submitted to DPE (now NSW DPHI) and Resources Regulator.

4.7 Public Safety Management Plan

A PSMP for LW S1A-S7A has been prepared and updated to address all potential safety hazards to the public through the provision of management strategies, controls and monitoring programs to be implemented to manage potential risks from subsidence related impacts as a result of LW S1A-S7A secondary extraction. Features located within the Extraction Plan Study Area that could pose a hazard to public safety are summarised in **Table 5.**

The PSMP was prepared to address the requirements listed in Condition C8(g)(vii) of SSD 8445 (refer to Table 1 of the PSMP), the DPE *Extraction Plan Guidelines* (DPE, 2022), the *Managing Risks of Subsidence Guide: WHS (Mines and Petroleum Sites) Legislation* (Department of Industry – Resources Regulator, 2017), requirements of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2022 (Clause 27 and Clause 28) and other regulatory requirements (refer to Section 2 of the PSMP). Regulatory requirements applicable to the PSMP to manage subsidence related risks to public safety are outlined further in Section 2.2 of the PSMP.

Risk assessments undertaken in support of the development of the PSMP are detailed in Section 7.6 of this Extraction Plan Main Document. The PSMP was prepared in consultation with the Resources Regulator (refer to **Section 2.1.3**).

The PSMP provides information on (but not limited to) the following:

- Potential subsidence-related public safety hazards (Section 3.2 of the PSMP); and
- Performance measures for public safety (Section 6.1 of the PSMP).

Features identified within the Extraction Plan Study Area relevant to public safety are managed under a number of supporting plans in addition to the PSMP, as noted in **Table 5**.

The following documents were prepared to support the PSMP:

- Built Features Management Plan;
- Land Management Plan;
- Subsidence Prediction and Impact Assessment Report (MSEC, 2022); and
- Modification 3 - Longwall S7A - Subsidence Predictions and Impact Assessment Report (MSEC, 2024).

5 Subsidence Monitoring Plan

5.1 Monitoring Strategy and Approach

5.1.1 Subsidence Monitoring Plan for LW S1A-S7A

An integrated Subsidence Monitoring Plan has been developed and updated for LW S1A-S7A as a component of this Extraction Plan in accordance with Condition C8(g)(i) of SSD 8445. The Subsidence Monitoring Plan sets out the program for the monitoring of subsidence movements and effects associated with second workings of LW S1A-S7A and provides consolidated summaries for the monitoring of subsidence impacts and environmental consequences to environmental and built features.

The purpose of the Subsidence Monitoring Plan is to:

- Demonstrate mine development and extraction are undertaken as per the mine design;
- Provide information to demonstrate that statutory performance measures are met;
- Target monitoring of environmental and built features within the Extraction Plan Study Area;
- Meet stakeholder monitoring requirements for environmental features;
- Meet built feature owners monitoring requirements for built features;
- Provide appropriate information required to assess against triggers within the relevant TARPs, including data for trend analysis to inform adaptive management; and
- Provide a suitable basis for future Extraction Plans and associated monitoring programs required as part of Tahmoor Mine operations.

The Subsidence Monitoring Plan is designed to ensure that a clear and concise monitoring program of all subsidence related effects, impacts and environmental consequences is implemented. The Subsidence Monitoring Plan includes:

- A detailed program for subsidence movement and effects monitoring for LW S1A-S7A using subsidence monitoring lines to measure both conventional and non-conventional vertical subsidence, tile and strain (tensile and compressive);
- A consolidated summary of built features monitoring as detailed within the BFMP and supporting sub-plans; and
- A consolidated summary of environmental monitoring for management of water (surface and groundwater), landscape features, biodiversity, and heritage (Aboriginal and historical) as detailed in the management plans for this Extraction Plan.

The Subsidence Monitoring Plan is scheduled and tracked by Tahmoor Coal according to longwall distance and/or scheduled dates. Tahmoor Coal will carry out surveys, inspections and notifications as scheduled, and the required actions will be assigned to the relevant role to ensure the Subsidence Monitoring Plan is achieved.

5.1.2 Summary of Monitoring in this Extraction Plan

The following sections provide a summary and re-presentation of monitoring details from the Subsidence Monitoring Plan and other relevant management plans and sub-plans for the monitoring of subsidence effects (**Section 5.2**), subsidence impacts and environmental consequences (**Section 5.3**) associated with the extraction of LW S1A-S7A.

Full detail pertaining to subsidence monitoring methodology can be found in the Subsidence Monitoring Plan and the relevant management plans and sub-plans discussed in the sections below.

5.2 Subsidence Effects Monitoring

The Subsidence Monitoring Plan includes a monitoring program to evaluate subsidence effects as a result of LW S1A-S7A extraction has been prepared and updated in accordance with Condition C8(g)(i) of SSD 8445 and the DPE *Extraction Plan Guidelines* (DPE, 2022).

As a longwall progresses, subsidence begins to develop at a point in front of the active longwall face and continues to develop after the longwall passes. This is termed the 'active subsidence zone' for the purposes of this Extraction Plan. The active subsidence zone for each longwall is defined by the area bounded by the predicted 20 mm subsidence contour for the active longwall and a distance of 150 m in front of the active longwall face and 450 m behind the active longwall face. The active subsidence zone is illustrated in **Figure 13**.

Tahmoor Coal has established a monitoring network to monitor subsidence movements as a result of LW S1A-S7A. The layout of monitoring lines and points is illustrated in **Figure 14** as well as on Graphical Plan 7, and is discussed further in the Subsidence Monitoring Plan.

The combined monitoring network consists of the following:

- Global Navigation Satellite System (GNSS) units installed in the following locations:
    - Centrelines of LW S1A to S3A - The GNSS units are located in bushland within the Australian Wildlife Sanctuary. The units are proposed to track the development of subsidence and horizontal movements above the commencing ends of the longwalls. The monitoring data will provide the first subsidence results for each panel to compare against subsidence predictions. Conventional survey lines are not possible in this area due to thick vegetation, preventing lines of sight;
    - Valley closure across Tributary to Teatree Hollow - Pairs of GNSS units are be located across the Tributary to Teatree Hollow to measure valley closure. Conventional survey lines are not possible in this area due to thick vegetation, preventing lines of sight across the sides of the valley. Two pairs of GNSS units are planned to be located across rockbars controlling pools along the creek. A site of archaeological significance is located near one these rockbars. The results will be cross-checked by manual surveys across the rockbars in the base of the valley;
    - Valley closure across Teatree Hollow – A pair of GNSS units have been installed across the Teatree Hollow to measure valley closure above LW S2A. Conventional survey lines are not possible in this area due to thick vegetation, preventing lines of sight across the sides of the valley.
    - Bargo River – Two GNSS units were installed across the Bargo River to monitor for valley closure and whether the existing goaf above previously extracted LWs 14B to 19 subsides during the extraction of LWs S1A to S7A. The locations are shown in Drawing No. MSEC1193-01-01, subject to approval by landowners;
    - Railway Viaduct across Bargo River - Two GNSS units are located within the Main Southern Railway corridor to measure far field movements, if any, between the abutments of the Viaduct. The two GNSS units will also allow valley closure, if any, to be detected. The results will be cross-checked by manual surveys across the Viaduct if they exceed trigger levels;
    - Main Southern Railway above LW S5A – One GNSS unit is located within the Main Southern Railway corridor above the commencing end of LW S5A The GNSS unit will provide early detection of subsidence within the rail corridor and the results may trigger earlier than planned commencement of weekly surveys along the railway. ;

- Picton Weir - Two GNSS units are located at the tops of the valley on either side of the Picton Weir to measure far field movements, if any, across the valley. The two GNSS units will also allow valley closure, if any, to be detected. An additional GNSS unit has been installed between the Picton Weir and LW S7A. The results can be cross-checked by manual surveys across the Weir if they exceed trigger levels;
- Hornes Creek – Three pairs of GNSS units were installed at the tops of the valley on either side of Hornes Creek to measure far field movements, if any, across the valley.
- Wellers Road Overbridge - A GNSS unit has been installed at the Wellers Road Overbridge. to measure far field movements. The results will trigger surveys of the Bridge if they exceed trigger levels; and
- Tahmoor Mine base station site - A GNSS unit has been installed at Tahmoor Mine's survey base station. The surveys will assist Tahmoor Mine's underground survey team to establish survey control, as required.

- Survey lines and survey marks in association with Teatree Hollow and the tributary to Teatree Hollow. This includes survey marks across the base of the creek along Tributary of Teatree Hollow, and where roads, railways and other infrastructure services cross the tributary and associated first order drainage lines. Survey marks were also installed across the base of Teatree Hollow, and a survey line across the road crossing that intersects Teatree Hollow;
- Survey lines across the southern boundary of Tahmoor Mine's property and along the western side of the REA;
- Survey lines installed along Remembrance Drive, Caloola Road, Yarran Road, Charlies Point Road and Great Southern Road;
- Survey line along the Main Southern Railway from 97.7 km to 99.8 km, and monitoring points for key items along the railway;
- Survey points at the Tahmoor Mine site to allow monitoring of the Main Southern Railway, Remembrance Drive, Rail Loop and road bridge, stockpile area and conveyors, the drift, winder house, building structures, dams, and associated services infrastructure;
- Survey points at the Wollondilly Anglican College and Australian Wildlife Sanctuary, as well as other commercial, industrial and business establishments in the Study Area; and
- Survey points at private properties, dwellings, buildings and dams.

The purpose of the survey lines is to measure the general magnitude and shape of surface subsidence. The observed subsidence movements will be used to provide early subsidence information to inform Tahmoor Coal and affected stakeholders. The information would assist Tahmoor Coal and affected stakeholders in considering whether any additional measures are required to manage potential impacts on the built features. In addition, survey lines in the creek systems will measure potential valley closure and upsidence movements at these locations.

The information will also be used by Tahmoor Coal as part of its ongoing review of subsidence effects on natural features.

Survey lines will consist of pegs spaced nominally every 20 m, where possible. Surveys will measure levels and horizontal distances between adjacent pegs. Baseline surveys were completed prior to the commencement of mining of LW S1A.

Figure 13 **Diagrammatic representation of Active Subsidence Zone**

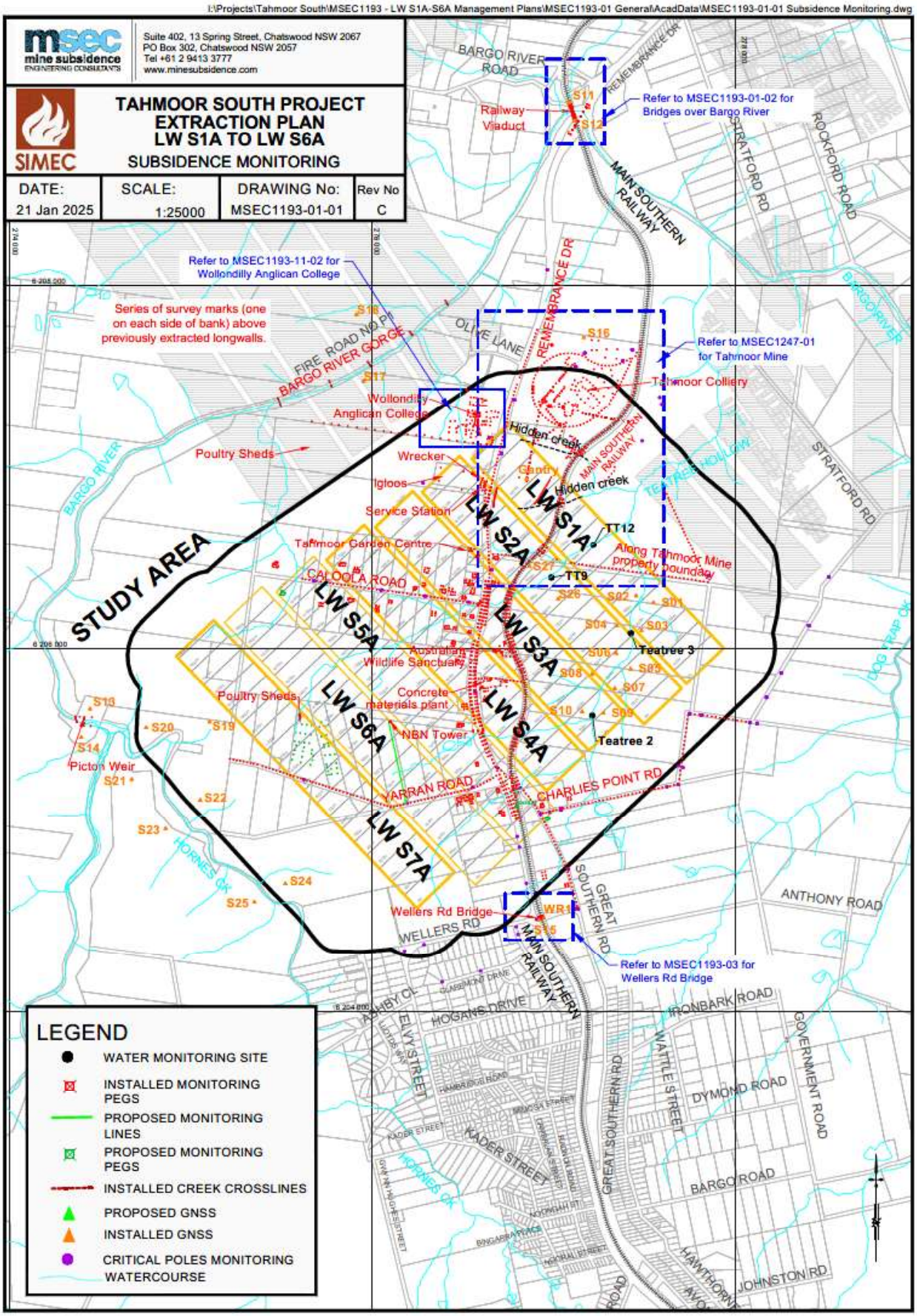

Figure 14 **Monitoring Locations for LW S1A-S7A Extraction Plan Study Area (from Subsidence Monitoring Plan)**

5.3 Subsidence Impacts and Environmental Consequences Monitoring

A monitoring program to evaluate subsidence impacts and environmental consequences as a result of LW S1A-S7A extraction has been prepared and updated in accordance with Condition C8(g)(i) of SSD 8445 and the DPE *Extraction Plan Guidelines* (DPE, 2022).

5.3.1 Monitoring of Built Features

Built features in the Study Area, as described in **Section 4.6** of this Extraction Plan, are monitored and managed in accordance with dedicated supporting Subsidence Management Plans (sub-plans) developed for each type of built feature specifically in consultation with the relevant stakeholders. The sub-plans for built features are managed collectively by the over-arching BFMP.

Monitoring of built features will include (in addition to subsidence effects monitoring discussed in **Section 5.2**):

- Public roads and main infrastructure - Ground surveys along public roads, visual inspection along public roads, gas detection surveys, power pole surveys, Optical Time Domain Reflectometer (OTDR) monitoring for optical fibre cables;
- Picton Weir- Continuous GNSS monitoring, ground survey, visual inspections;
- Wollondilly Anglican College - ground surveys, alignment survey of sensitive classroom equipment, visual inspections;
- Australian Wildlife Sanctuary - ground survey, asbestos air monitoring, visual inspections;
- Structures - ground surveys, visual inspections of specific structures including pools;
- Farm dams - visual inspection;
- Commercial, industrial and business establishments - ground surveys, visual inspections;
- Tahmoor Mine Site Infrastructure - Monitoring at key items of infrastructure, which includes absolute 3D and 2D surveys, continuous GNSS monitoring, and baseline surveys and visual inspections as defined in the Tahmoor Mine Site Management Plan; and
- Main Southern Railway and Tahmoor Mine Rail Loop - Monitoring at key items of railway infrastructure, which will include absolute 3D surveys, continuous GNSS monitoring, and baseline structural surveys and additional monitoring as defined in the Main Southern Railway Management plan.

A consolidated summary of the monitoring of built features is presented in Section 3 of the Subsidence Monitoring Plan, and location of built features monitoring is illustrated in **Figure 14**.

5.3.2 Monitoring of Environmental Features

Monitoring and evaluation of subsidence performance measures and potential mining related impacts on surface water, groundwater, surface water, landscape features, flora and fauna, Aboriginal and European heritage, are described in detail in the Section 5.2 of each of the WMP, LMP, BMP and HMP.

Monitoring of environmental features will include (in addition to subsidence effect monitoring discussed in **Section 5.2**):

- Creeks:
  - Streamflow monitoring, continuous water level monitoring, manual water level monitoring and water quality sampling at locations show in **Figure 17**;
  - Visual inspections of pools and geomorphology survey of stream reaches in Teatree Hollow, Teatree Hollow tributary and the Bargo River tributary;

- Catchment survey of 10 headwater sites;

- Groundwater - Monitoring of groundwater levels and quality in shallow bores, private bores, NSW Government monitoring bores and deep groundwater pressure monitoring bores;
- Cliffs and natural steep slopes - Visual monitoring by a geotechnical engineer;
- Agricultural land - Visual inspection;
- Biodiversity - Bi-annual monitoring of amphibians, riparian vegetation, and aquatic biodiversity;
- Aboriginal heritage sites - Visual inspection; and
- Historical heritage sites - Monitoring as per built features monitoring, and visual inspection by an archaeologist.

The location of the biodiversity monitoring is illustrated in **Figure 15** and the location of surface water monitoring and groundwater monitoring is illustrated in **Figure 16** and **Figure 17**, respectively.

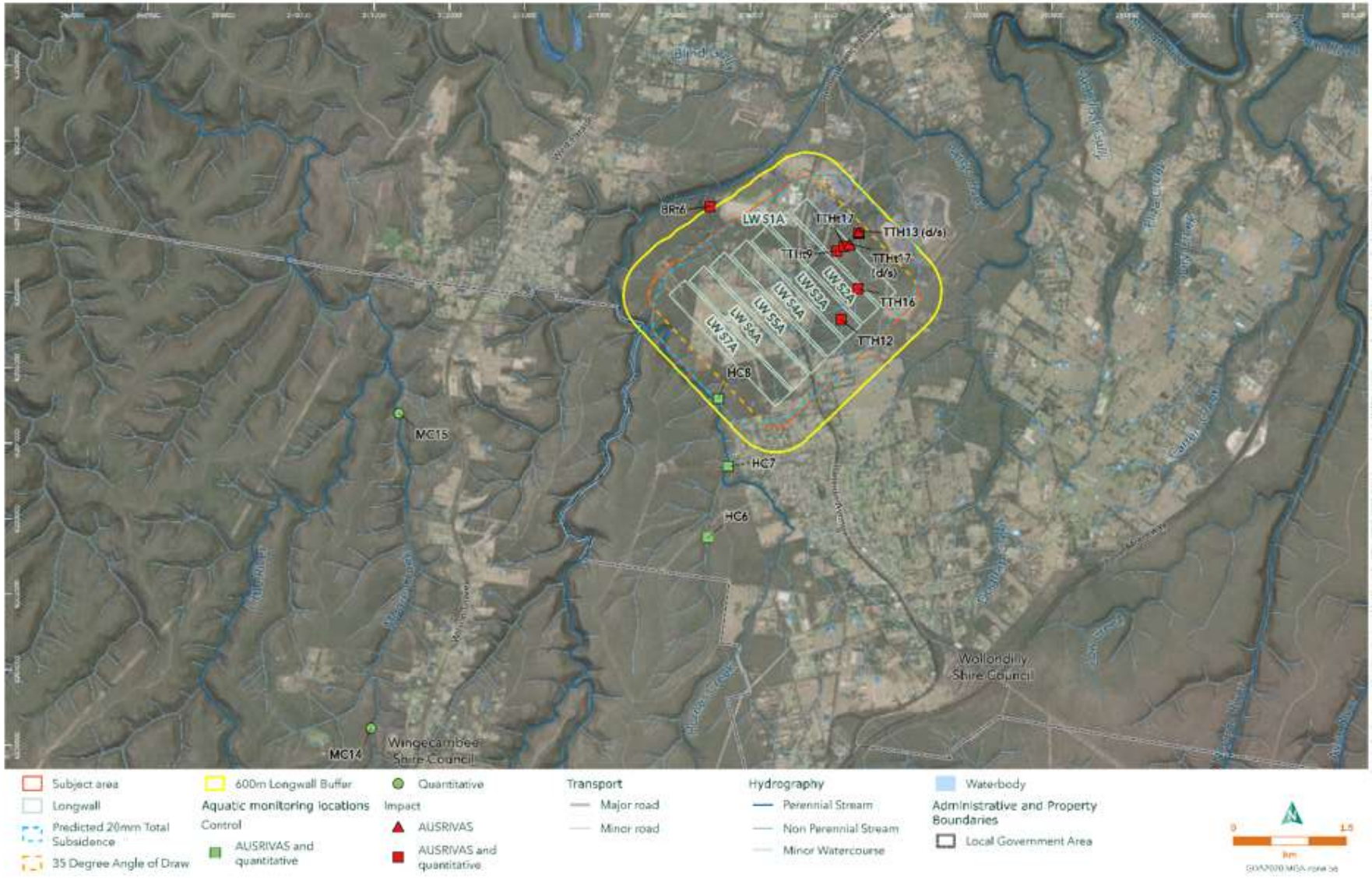

Figure 15 **Aquatic Biodiversity Monitoring Program (from Biodiversity Management Plan**

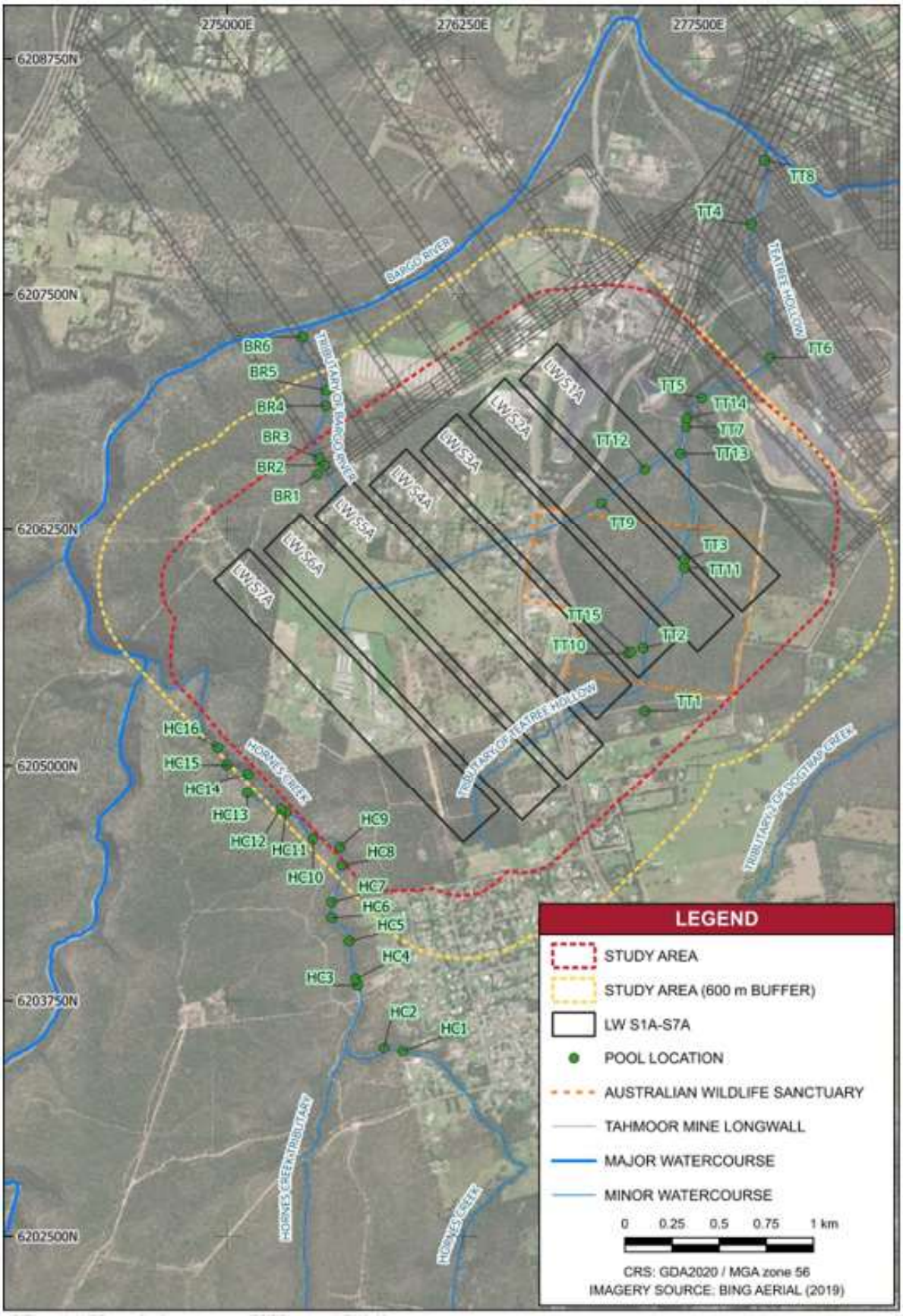

Figure 16 **Surface Water Monitoring Program (from Water Management Plan)**

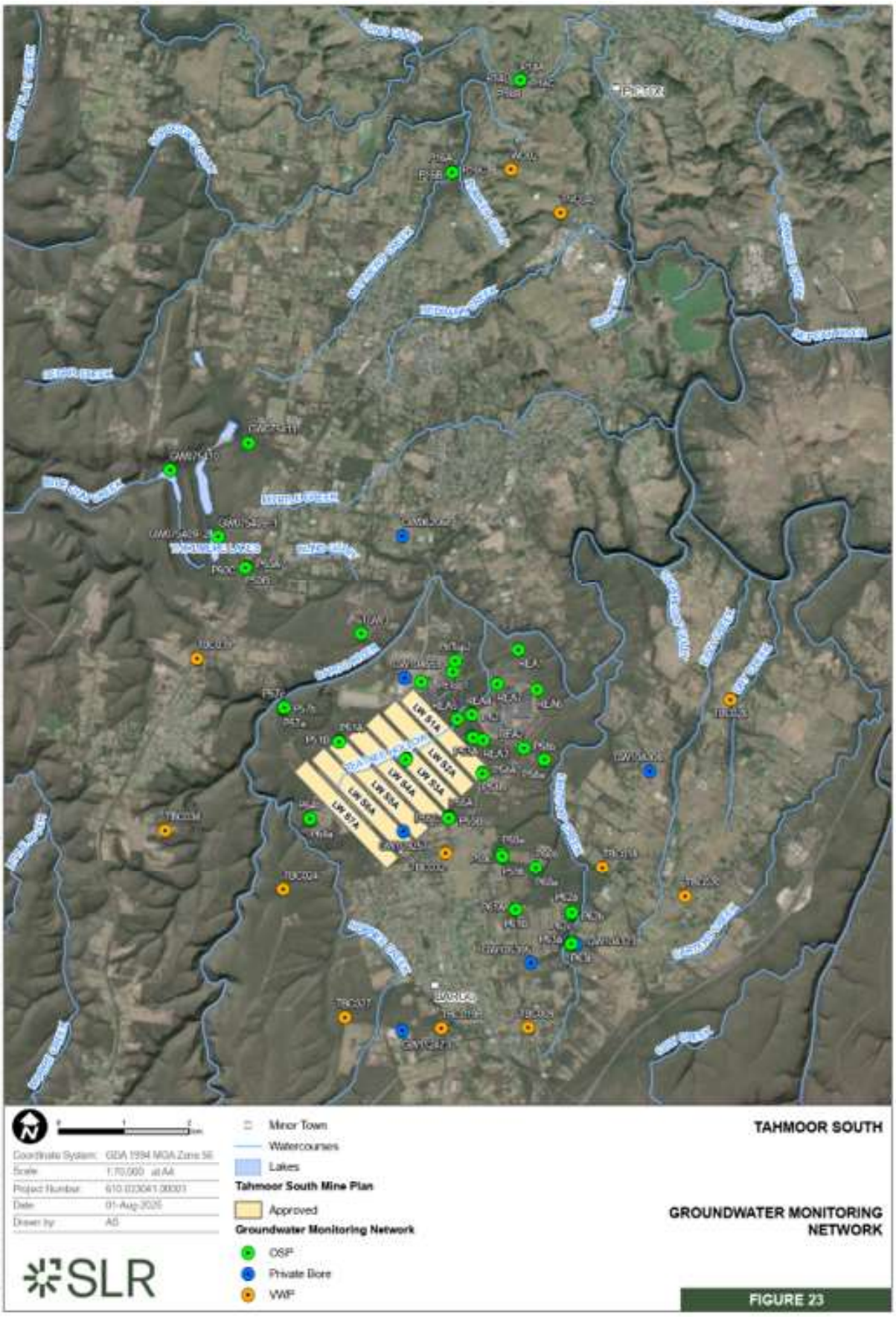

Figure 17 **Existing and Proposed Groundwater Monitoring Sites (from Water Management Plan)**

5.4 Baseline Monitoring to Support Future Extraction Plans

Tahmoor Coal has approval for the extraction of an addition six longwalls (Longwalls South 1B to South 6B, or the Tahmoor South 'B Series') in the Tahmoor South Domain. Monitoring data collected during the extraction of LW S1A-S7A will be used as baseline data to support these future longwalls. An extraction plan for LW S1B-S6B will be lodged in accordance with the relevant conditions of consent.

A monitoring program to collect sufficient baseline data for future extraction plans is summarized in **Table 19**, in accordance with Condition C8(i) of SSD 8445 and the DPE *Extraction Plan Guidelines* (DPE, 2022). This monitoring program has been consolidated from the various key sub-plans and this monitoring program will be used as reference site data for future longwalls. In addition, monitoring data collected during the mining of LW S1A-S6A would be used in the review of observed subsidence impacts and environmental consequences for future extraction plans.

Table 20 Baseline Monitoring Program to Support Future Extraction Plans

Aspect of Future Extraction Plans	Existing and Proposed Monitoring Programs	Tahmoor Coal Document Reference
Subsidence	• Subsidence monitoring undertaken in accordance with the Subsidence Monitoring Plan. • A significant amount of baseline data has been collected during the extraction of the previous longwall panels in the Tahmoor North Domain, which includes the most recently mined Western Domain as well as longwalls mined directly to the north and east of the proposed longwalls.	Subsidence Monitoring Plan
Surface Water	• Surface water monitoring (flow and quality) will be undertaken in accordance with the WMP. • A significant amount of baseline surface water data has been collected during the extraction of the previous longwall panels in the Western Domain and to the south of the Western Domain, as well as baseline data from the Tahmoor South Domain. • A monitoring program for future longwalls would be implemented at least two years in advance of mining.	WMP
Groundwater	• Groundwater monitoring (groundwater level and quality) undertaken in accordance with the WMP. • A significant amount of baseline groundwater data has been collected during the extraction of the previous longwall panels in the Western Domain and to the south of the Western Domain, as well as baseline data from the Tahmoor South Domain. • A monitoring program for future longwalls would be implemented at least two years in advance of mining.	WMP
Landscape	• Monitoring of impacts to steep slopes and agricultural land in accordance with the LMP. • A significant amount of baseline landscape feature data for cliffs, steep slopes and agricultural land has been collected during the extraction of the previous longwall panels in the Western Domain.	LMP
Biodiversity	• Biodiversity monitoring of aquatic habitat, macroinvertebrates, riparian vegetation, and amphibians in accordance with the BMP. • A significant amount of baseline ecology data has been collected during 2019-2022 in the Tahmoor South Domain. • A significant amount of baseline ecology data for aquatic and terrestrial biodiversity has been collected during the extraction of the previous longwall panels in the Western Domain.	BMP
Heritage	• Monitoring of Aboriginal and historical heritage items in accordance with the HMP would be used in the review of observed subsidence impacts to inform future Extraction Plans for the Tahmoor South Domain. • A significant amount of baseline Aboriginal heritage data has also been collected during the extraction of the previous longwall panels in the Tahmoor South and Western Domains, as well as baseline data from the Tahmoor South Domain.	HMP

6 Graphical Plans

Graphical plans have been prepared for the LW S1A-S6A Extraction Plan Study Area in accordance with the *Extraction Plan Guidelines (*DPE, 2022) are listed in **Table 20**.

It is noted that given there are no existing or proposed workings in other seams above or below the proposed working seam, Plan 4 is not required.

Table 21 Graphical Plans

Plan Number	Plan Title	Plan Reference Number
Plan 1	Workings and Dimensions	TAH01144-1
Plan 2	Surface Features	TAH01144-2
Plan 3	Bulli Seam Geological Data	TAH01144-3
Plan 4	Existing and Proposed Workings in Seams Above and/or Below	Not required
Plan 5	Mining Titles and Land Ownership	TAH01144-5
Plan 6	Geological Sections	TAH01144-6
Plan 7	Subsidence Monitoring	TAH01144-7
Plan 8	Aerial Photography	TAH01144-8

7 Implementation

7.1 General Reporting

Reporting for the Extraction Plan is undertaken in accordance with the specific requirements from the Consent, relevant licences, and generally in accordance with the DPE *Extraction Plan Guidelines* (DPE, 2022), and the requirements of the WHSMP Regulation.

Details of the regular reporting requirements are provided in the following sections.

7.1.1 Annual Review

In accordance with Consent Condition E13, an Annual Review is required to be submitted by 31 March each year. The Annual Review will:

- Describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
- Include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the:
  - Relevant statutory requirements, limits or performance measures/criteria;
  - Requirements of any plan or program required under this consent;
  - Monitoring results of previous years; and
  - Relevant predictions in the EIS (or updated and contemporary modelling, as required by agencies).
- Identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;
- Evaluate and report on:
  - The effectiveness of the noise and air quality management systems; and
  - Compliance with the performance measures, criteria and operating conditions of this consent.
- Identify any trends in the monitoring data over the life of the development and provide any raw monitoring data as requested by the Planning Secretary;
- Identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
- Describe what measures will be implemented over the next calendar year to improve the environmental performance of the development.

The Annual Review is completed in accordance with the post-approval requirements for State significant mining developments and incorporates reporting requirements of the Resources Regulator. In addition, the Annual Review will also include a summary of environmental effects.

Annual Reports are lodged on the NSW Planning Portal and a copy is submitted to relevant agencies (e.g. Resources Regulator (Subsidence), Resources Regulator (Mining Act Inspectorate), EPA, Water NSW, Subsidence Advisory NSW, and Wollondilly Shire Council, TCCCC, and any interested person upon request. The reports are also made publicly available on the Tahmoor Coal website.

7.1.2 Annual Return

An Annual Return stating Tahmoor Mine's compliance with the conditions of EPL 1389 is completed and submitted to the EPA via the EPL portal by 28 February of each year. In addition to a statement of compliance with the conditions of EPL 1389, the report also includes a summary of monitoring results and complaints received for the 12-month period.

7.2 Incidents

7.2.1 Incident Definition

The Consent defines an incident as 'an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance'.

Material Harm is defined within the Consent as "harm to the environment that:

- Involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or results in actual or potential loss or property damage of an amount, or
- Amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)".

This definition excludes "harm" that is authorised under either this Consent or any other statutory approval.

As per the WHS Regulations (Mining and Petroleum Sites) 2022, a 'high potential incident' means any indication from monitoring data of the development of subsidence which may result in any incident referred to in:

- Clause 190 (a) (p) – a failure of ground, or of slope stability control measures; or
- Clause 190 (a) (q) – rock falls, instability of cliffs, steep slopes or natural dams, occurrence of sinkholes, development of surface cracking or deformations or release of gas at the surface, due to subsidence; or
- Clause 190 (a) (p) and (q).

7.2.2 Incident Management

Tahmoor Coal manages and responds to incidents in accordance with the following plans:

- Emergency Response Control Plan (TAH-HSEC-416);
- Pollution Incident Response Management Plan (TAH-HSEC-00155); and
- Notification of Environmental Pollution Incidents (TAH-HSEC-00224).

These plans have been developed to manage preparation, incident response and reporting requirements under the NSW *Protection of the Environment Operations Act 1997*.

The management plans provide roles and responsibilities, management strategies, action and response plans and record management protocols for incidents and emergencies.

7.2.3 Incident Reporting

A Written Incident Notification will be submitted to the Planning Secretary via the Major Projects website, and any other relevant agencies, within seven days after Tahmoor Coal becomes aware of an incident.

Written Incident Notifications will include:

- The development and application number;
- Details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
- How the incident was detected;

- When Tahmoor Coal became aware of the incident;
- Any actual or potential non-compliance with conditions of consent;
- Describe what immediate steps were taken in relation to the incident;
- Identify further action(s) that will be taken in relation to the incident; and
- Identify a project contact for further communication regarding the incident.

Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, Tahmoor Coal will provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a Detailed Incident Report.

Detailed Incident Reports will include:

- A summary of the incident;
- Outcomes of an incident investigation, including identification of the cause of the incident;
- Details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
- Details of any communication with other stakeholders regarding the incident.

All incidents will be reported in the Annual Review and a record maintained in Tahmoor Coal's Compliance Management System, Cority.

In addition, in accordance with the DAWE (now Commonwealth DCCEEW) approval conditions 23 and 24 for the Tahmoor South Project, Tahmoor Coal will notify the Department in writing of any incident. Notification of this occurrence will be given as soon as practicable, and no later than two business days after becoming aware of the incident.

The notification will specify:

- Any condition which is in breach;
- A short description of the incident; and
- The location (including co-ordinates), date, and time of the incident. In the event the exact information cannot be provided, provide the best information available.

Tahmoor Coal will also provide details of any incident as soon as practicable and no later than 10 business days after becoming aware of the incident, specifying:

- Any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;
- The potential impacts of the incident; and
- The method and timing of any remedial action that will be undertaken by the approval holder.

7.3 Non-Compliances

7.3.1 Non-Compliance Definition

The Consent defines a non-compliance as 'an occurrence, set of circumstances or development that is in breach of the consent'.

7.3.2 Non-Compliance Management

Non-compliances or system defects detected during monitoring, inspections and audits will be managed in accordance with the Tahmoor Coal Environmental Management Framework Document (TAH-HSEC-00173), with corrective action plans developed and implemented to rectify any issues.

7.3.3 Non-Compliance Reporting

The Planning Secretary will be notified in writing via the Major Projects website within seven days after Tahmoor Coal becomes aware of any non-compliance.

If a non-compliance is detected, the following steps will be followed:

- Identify and confirm the non-compliance (i.e. review against approval criteria or condition and confirm that a non-compliance has occurred);
- Complete internal environmental incident reporting documentation including an investigation to capture all relevant information;
- In accordance with the relevant approval, determine what action (i.e. external reporting) is required. Specifically, determine if immediate reporting is required and to which stakeholders, or ensure that the event is captured for future reporting;
- Following the incident investigation, develop a corrective action plan aimed at preventing future re-occurrence; and
- Complete all required reporting and consult with relevant agencies on the corrective action plan to be implemented.

A non-compliance notification will identify the following:

- The development and the application number;
- The condition of consent that the development is non-compliant with:
    i. The way in which it does not comply and the reasons for the non-compliance (if known); and
    ii. Any actions which have been, or will be, undertaken to address the non-compliance.

In addition, in accordance with the DAWE (now Commonwealth DCCEEW) approval conditions 23 and 24 for the Tahmoor South Project, Tahmoor Coal will notify the Department in writing of any non-compliance with the conditions or commitments made in the Extraction Plan. Notification of this occurrence will be given as soon as practicable, and no later than two business days after becoming aware of the non-compliance.

The notification will specify:

- Any condition which is in breach;
- A short description of the non-compliance; and
- The location (including co-ordinates), date, and time of the non-compliance. In the event the exact information cannot be provided, provide the best information available.

Tahmoor Coal will also provide details of any non-compliance with the conditions or commitments made in the Extraction Plan as soon as practicable and no later than 10 business days after becoming aware of the non-compliance, specifying:

- Any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;
- The potential impacts of the non-compliance; and
- The method and timing of any remedial action that will be undertaken by the approval holder.

A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

All non-compliances will be reported in the Annual Review and a record maintained in Tahmoor Coal's Compliance Management System, Cority.

7.4 Exceedances

7.4.1 Exceedance Definition

For the purposes of this plan, an exceedance is defined 'any instance where monitoring results show an exceedance of criterion outlined within the Consent or other regulatory instrument'.

7.4.2 Exceedance Management

Exceedances will be managed by Tahmoor Coal through the Contingency Plan and TARP process as outlined in **Section 3.6** and **Appendix C**.

7.4.3 Exceedance Reporting

Exceedance reporting will occur as per the response in the Trigger Actions Response Plans, with reporting to DPHI (and other relevant agencies) within 7 days of investigation completion where the TARP Level 'exceedance of performance measure' has occurred.

In accordance with Condition E4 of the Consent, where any exceedance of the criteria or performance measures outlined within this document has occurred, Tahmoor Coal will:

- Take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
- Consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures / corrective management actions or other course of action;
- Within 14 days of the exceedance occurring (or other timeframe agreed by the Planning Secretary), submit a report to the Planning Secretary describing these remediation options and any preferred remediation measures / corrective management actions or other course of action; and
- Implement reasonable remediation measures / corrective management actions as directed by the Planning Secretary.

In addition, notification to Commonwealth DCCEEW is also required of any detection or prediction of an exceedance of a performance measure within 2 business days.

In accordance with Condition 11 of the DAWE (now Commonwealth DCCEEW) Consent for the Tahmoor South Project, if an exceedance of the performance measures is detected, Tahmoor Coal will submit to the Department for approval an Impact Response Plan that has been peer reviewed. Each Impact Response Plan will include, at a minimum:

- Be prepared by a suitably qualified person;
- Describe all potential and actual impacts to water resources arising from the exceedance;
- Include conceptual modelling, as well as a review of all historical monitoring data to determine the stressor-response relationships for any potential GDEs and consideration of potential contributing activities;
- Consider and where appropriate include local scale numerical modelling with consideration of potential contributing activities;
- Derive a scientifically-robust rectification strategy based on multiple lines of evidence and field data to support the assessment of the environmental values of water resources (including the groundwater-dependence of any potential GDEs) within the Development Application Area;
- Identify if any further investigations are required to determine the cause of, and/or corrective actions, for the exceedance;
- Include the mitigation and management measures that the approval holder has taken and/or

proposes to take to reverse the exceedance, including data demonstrating the effectiveness of the mitigation and management measures;

- Provide justification for how the proposed mitigation and management measures will achieve and maintain the requirements of condition 4; and
- Include a peer review and details of how the approval holder has addressed any inadequacies raised in the peer review.

The approved Impact Response Plan will be implemented. Conditions 12 to 16 of the DAWE (now Commonwealth DCCEEW) approval of the Tahmoor South Project will also be observed.

All exceedances will be reported in the Annual Review and a record maintained in Tahmoor Coal's Compliance Management System, Cority.

7.5 Complaints and Disputes

Community Complaints at Tahmoor Coal are managed in accordance with Community Complaints and Enquiry Procedure (TAH-HSEC-00120). Tahmoor Coal operates a 24-hour complaints line (1800 154 415) for receiving community complaints and other stakeholder communications. The general process detailed in the procedure for responding to complaints is:

- Acknowledging all complaints and responding to the complainant within 24 hours where practicable;
- Registering all complaint details in Cority;
- Investigating complaints impartially considering the facts and the circumstances prevailing at the time;
- Implementing corrective actions if required; and
- Reporting to relevant stakeholders of investigation outcomes and corrective actions taken.

A record of all community complaints in relation to activities undertaken by the licensee must be kept in a legible form and be in accordance with Tahmoor Coal's Environmental Protection Licence (EPL) 1389.

The following information will also be kept in the event of a community complaint, as required by Section M4 in Tahmoor Coal's EPL 1389:

- The date and time of the complaint;
- The method by which the complaint was made;
- Any personal details of the complainant which were provided by the complainant or a note to that effect;
- The nature of the complaint;
- The action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- If no action was taken by the licensee, the reasons why no action was taken.

These records must be kept for at least 4 years after the complaint was made and be able to be produced to any authorised officer who asks to see them.

In the event of a dispute or conflict between Tahmoor Coal personnel and a member of the community, the Tahmoor Coal Environment and Community Manager will facilitate communication between both parties to reach a resolution, which may include a meeting with the complainant to discuss the issue.

Where relevant, negotiations will be initiated in accordance with any relevant Consent conditions. This general process is documented in the Community Complaints and Enquiry Procedure (TAH-HSEC-00120).

If a dispute cannot be resolved, the matter will be escalated to involve the site Operations Manager or General Manager as required and may involve consultation with the relevant government agency to assist in reaching a determination on the matter.

7.6 Risk Assessments

7.6.1 Site-wide Risk Assessment

Aspects and impacts at Tahmoor Mine are considered in light of legislative requirements and internal and external stakeholder views. Key aspects and impacts are identified during the annual review of the Tahmoor Coal Environment and Community (E&C) Broad Brush Risk Assessment (BBRA) and the operational Life of Mine (LOM) Risk Assessment and Site Wide Broad-Brush Risk Assessment (Mine BBRA).

7.6.2 General Risk Assessment

Tahmoor Coal completed a risk assessment for the extraction of LW S1A-S6A on 3 November 2021 to determine the major risks relating to built features and environmental features associated with secondary extraction of LW S1A-S6A. A risk assessment was also completed on 30 July 2025 to determine the additional risks to environmental features and built infrastructure associated with the extraction of the LW S7A. This risk assessment forms an addendum of the existing LW S1A-LW S6A risk assessment.

The primary objectives of the risk assessments were to:

- Ensure the required approvals for the proposed longwalls are obtained in a timely manner to enable mining to commence;
- Ensure all environmental risks are appropriately eliminated or managed according to environmental legislation requirements;
- Ensure the safe and serviceable operation of all surface built features in the Study Area;
- Ensure that the health and safety of people who may be present in the Study Area are not put at risk due to mine subsidence;
- Assist in the establishment of procedures to measure, monitor, control, mitigate and repair built features in the Study Area; and
- Ensure the required management plans for environmental features and built features are prepared and in place in a timely manner to manage potential impacts to environmental features or built features during mining.

The risk assessment was completed to satisfy Tahmoor Coal's requirements in relation to WHS and in compliance to mining regulations and conditions and is completed in consultation with key stakeholders. The risk assessments for LW S1A-S6A and LW S7A were completed in accordance with:

- Risk Management (TAH-HSEC-00229) standard prepared by Tahmoor Coal, which details the 12 Step Risk Management Process for managing risk and the risk matrix used to categorise risks;
- WRAC Workplace Risk Assessment and Controls (TAH-HSEC-00014) standard prepared by Tahmoor Coal, which details the methodology for use during the risk assessment;
- DPE (now NSW DPHI) requirements and Conditions of Approval (SSD 8445);
- *NSW Work Health and Safety (Mines and Petroleum Sites) Regulations 2014* (it is noted that this was updated in 2022);
- AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines; and
- Risk Management Handbook for the Mining Industry (MDG1010).

Risks were identified and assessed through the review of known surface and sub-surface features within the Extraction Plan Study Area. The risk assessments also drew upon the experience and results of

previous risk assessments completed for previous longwalls at Tahmoor Mine.

The risk assessments were completed by members of the Tahmoor Coal E&C Department and relevant technical specialists, and was facilitated by a Tahmoor Coal internal facilitator.

The outcomes of the risk assessments are outlined in the PSMP.. Treatment plans / tasks identified during the risk assessment have been recorded in in Cority and assigned to responsible personnel for completion within appropriate timeframes.

7.6.3 Built Feature Specific Risk Assessments

Further risk assessments for specific built features in the LW S1A-S7A Study Area will be completed if potential impacts to these features are deemed to be more detailed than the risks assessed in the general LW S1A-S7A Risk Assessment. The results from these risk assessments will be included in the individual management plans for the features, as listed in **Section 2.1.2** and **Table 5**.

7.7 Audits and Reviews of Environment and Community Performance

7.7.1 Internal Audit and Review

In accordance with internal company requirements, Tahmoor Coal has implemented a system for the monitoring and review of E&C performance at the site. Tahmoor Coal is to provide ongoing monitoring and regular management review of E&C performance to:

- Confirm the adequacy and effectiveness of management plans, procedures and standards;
- Address any identified weaknesses;
- Share good performance and lessons learnt with other sites; and
- Ensure ongoing compliance with all leases, licences and approvals.

Process or area specific internal audits are also conducted periodically, generally administered by the E&C Manager, focussing on the following areas:

- Air quality;
- Water management;
- Erosion and sediment control; and
- Statutory approvals.

These audits may be conducted by consultants on behalf of Tahmoor Coal, by Liberty GFG employees or may be self-assessments conducted by Tahmoor Coal personnel. Audit results and corrective actions are recorded in Cority and assigned to responsible personnel for completion within appropriate timeframes.

7.7.2 Independent Environmental Audit

In accordance with Conditions E15 – E20 of the Consent, Tahmoor Coal will complete Independent Environmental Audits of the development at the frequencies determined within DPE's Independent Audit Post Approval Requirements (2020). For extraction, the 'Operational Phase' requirements are relevant, requiring an initial independent audit within 26 weeks of the commencement of operation and ongoing independent audits at intervals no greater than 3 years or as otherwise agreed by the Planning Secretary.

The audits will assess:

- Environmental performance of the Mine;
- Compliance with the requirements of all relevant development consents, mining leases, Exploration Authorisations, and site environmental protection licence.

The audit will also assess:

- Environmental assessments; and

- Plans and programs required by above approvals.

The audit will review the adequacy of the following requirements under the abovementioned approvals:

- Strategies;
- Plans; and
- Programs.

The audit will recommend appropriate measures and corrective actions to improve environmental performance at Tahmoor Coal. Audit results and corrective actions are recorded in Cority and assigned to responsible personnel for completion within appropriate timeframes.

7.7.3 Extraction Plan Audit

Audits of the Extraction Plan are to be conducted in consultation with the Plan owner and nominated individuals and shall focus on the content and implementation.

Audits on the content shall consist of a determination of understanding of the Extraction Plan by the individual's allocated responsibility under this plan.

Audits on the implementation shall consist of reviews of the safe working procedures and risk assessments developed to ensure safe operation of this Extraction Plan, they may also involve discussions with personnel involved in the management plan to determine understanding and compliance.

Should an audit of this Extraction Plan determine that a deficiency is evident in the content or implementation, the results are to be brought to the attention of the E&C Manager that corrective actions can be developed and implemented. Corrective actions are recorded in Cority and assigned to responsible personnel for completion within appropriate timeframes.

Tahmoor Coal is responsible to verify that the nominated corrective action has been implemented by way of a follow up audit.

Any changes to the Extraction Plan are to be managed and communicated to all personnel in accordance with Tahmoor Coal's Document and Record Control (TAH-HSEC-00124) and Change Management Standard (TAH-HSEC-00171) documents.

Additionally, auditing will be undertaken in accordance with:

- Health and Safety Management Plan (TAH-HSEC-00189); and
- Environmental Management System Framework (EMSF) (TAH-HSEC-00173).

7.8 Review of Documents

7.8.1 Review of Extraction Plan

This Extraction Plan Main Document will be reviewed on a time or event basis, as is required:

Time based:

- In accordance with Condition E7 (a) of the Consent, a review will be required within 3 months of:
  - Any incident, event or finding that identifies an inadequacy in the risk assessment or associated documents to continue to effectively manage the identified hazard;
  - A change to the workplace itself or any aspect of the work environment, a change to a system of work, a process or a procedure;
- In accordance with Condition E7 (b-e) of the Consent, this plan will be reviewed within three months of:
  - the submission of an Annual Review under Condition E13;

- the submission of an Independent Environmental Audit under Condition E15;
- the approval of any modification of the conditions of this consent (unless the conditions require otherwise); or
- notification of a change in development phase under Condition A19.

Event based:

- Stakeholders raise issues that necessitate a review;
- Significant change in mine design or layout;
- Unpredicted subsidence impacts or environmental consequences have required implementation of contingency actions;
- Development Consent requirements trigger a review;
- Circumstances in either Clause 15 and/or Clause 124 of the WHSMP Regulation and/or Clause 38 of the WHS Regulation (refer to Section 3.2.4 of this Extraction Plan for further detail); and/or
- Monitoring, incident or audit processes demonstrate that a review is warranted.

If deemed appropriate, relevant stakeholders may be included in the review process. All reviews are to be documented. The process for review of this document will be in according to Tahmoor Coal's Document and Record Control (TAH-HSEC-00124) document.

Following changes (or as otherwise required above) a copy of the amended management plan will be forwarded to the Planning Secretary for approval.

7.8.2 Review of Other Management Plans

The Key Sub-plans prepared in support of this Extraction Plan (refer to **Section 4**) are also subject to individual review requirements as detailed within each plan. Amendments to the Key Sub-plans will be undertaken in consultation with relevant stakeholders, where deemed necessary. Following changes (or as otherwise required above) a copy of the amended Key Sub-plans will be forwarded to the Planning Secretary for approval.

The review of other management plans that apply more broadly to the whole mine site, such as the Rehabilitation Management Plan (TAH-HSEC-00402) and the Environmental Management Strategy (TAH-HSEC-00375), may be required following the completion of this Extraction Plan. The process for review of these documents will be in according to Tahmoor Coal's Document and Record Control (TAH-HSEC-00124) document.

7.8.3 Document Control

This Extraction Plan includes Document Control details as part of the document quality assurance and control (QA/QC). This includes the following Document Control information:

- Document details including author(s), revision numbers, dates and status (refer to Document Control table at the start of this Extraction Plan main document, and **Section 8.5**);
- Revision, approval and authorisation details (refer to Document Control table at the start of this Extraction Plan main document, and **Section 8.5**); and
- Distribution details including the provision to external stakeholders (refer to **Section 8.6**).

All revisions of this Extraction Plan are stored on Tahmoor Coal's Document Control Software, Intelex, and are updated in accordance with Tahmoor Coal's Document and Record Control (TAH-HSEC-00124) and Change Management Standard (TAH-HSEC-00171) documents.

7.9 Roles and Responsibilities

7.9.1 General Roles and Responsibilities

E&C management is regarded as part of the responsibilities of all employees and contractors at Tahmoor Coal. Specific information pertaining to the role, responsibility, authority and accountability of key personnel involved in environmental management at Tahmoor Coal is provided in **Table 21** below.

Table 22 Roles and Responsibilities

Position	Responsibilities
Operations Manager	• Approve this management plan and any revised versions as required. • Provide adequate environmental personnel/resources for implementation of this management plan and associated plans. • Ensure underground mining activities are conducted in accordance with this management plan.
Environment & Community Manager	• Approve this management plan and any revised versions as required. • Determine adequate resources and funds are available to ensure the effectiveness of this procedure. • Ensure this management plan is implemented and maintained. • Certify compliance and adherence to this management plan. • Ensure any potential or actual issues, triggers and non-conformances are reported in accordance with this management plan, regulatory requirements and corporate standards. • Liaise with relevant government agencies and built feature owners in relation to regulatory conditions and compliance issues. • Coordinate external audits, corporate reporting and management.
Approvals Specialist	• Develop, implement, review and maintain this management plan and system documents. • Review and assess subsidence monitoring results against predictions. • Coordinate environmental reporting for timely completion in accordance with internal and external requirements. • Investigate and report any exceedances of performance indicators in accordance with the TARPs. • Implement subsidence management actions as required by the TARPs.
Environmental Specialist	• Coordinate environmental compliance on-site including timely completion of monitoring and reporting in accordance with internal and external requirements. • Assist in the development, implementation, review and maintain of this management plan and system documents. • Implement and ensure the completion of audit actions.
Community Liaison Specialist	• Liaise with the community as required and as per the Stakeholder Engagement Plan, including facilitation of Community Consultative Committee meetings. • Consult with relevant stakeholders during the development of management plans relating to their built features. • Liaise with land owners, landholders and land managers to gain access for subsidence monitoring and any remediation works. • Ensure all community complaints are addressed, investigated and appropriately managed as per site procedures, and reported internally as per internal requirements.
Surveyor	• Coordinate with the Community Liaison Specialist to gain access for subsidence monitoring. • Establish and undertake subsidence monitoring in accordance with this management plan to the required survey standard and within the specified timeframes.
Mine Subsidence Engineer	• Ensure monitoring data are adequately checked, processed and recorded. • Review and assess subsidence monitoring results against predictions. • Provide monitoring results to the E&C Team, relevant agencies and built feature owners. • Notify the Environment and Community Manager of any identified public safety issues.
All Other Employees and Contractors	• Complete activities under their control in accordance with this management plan and associated plans and site procedures. • Ensure environmental controls within their jurisdiction are operated and maintained in a proper and efficient manner. • Report all environmental incidents and complaints in a timely manner.

7.9.2 Employee & Contractor Training

Environmental training for Tahmoor Coal employees and contractors is conducted in accordance with the

Environment & Community Training Needs Analysis, which Tahmoor Coal manages through the Scenario Training Database. General environmental awareness training is provided to all employees and contractors annually through a generic visitor induction and the safety training session scheduled by the Tahmoor Coal Health, Safety & Training Department.

7.9.3 Response Groups

Tahmoor Coal operates three response groups made up of Tahmoor Coal Staff and relevant technical specialists:

- Environmental Response Group (ERG);
- Structural Response Group (SRG); and
- Rail Response Group (RRG).

The response groups are responsible for taking the necessary actions required to manage the risks that are identified from monitoring of natural and built features to ensure that the health and safety of people and the environment are not put at risk due to mine subsidence. Each response group assists in the development and review management plans, collects and analyses monitoring results, determines potential impacts, and provides advice regarding appropriate actions relevant to the area of interest.

Each response group is made up of a group of key members, and the response group may invite other specialist consultants and stakeholders depending on the topic of conversation. Each group meets regularly and outcomes of the meetings are documented.

7.10 Access to Information

7.10.1 Tahmoor Coal Website

In accordance with Condition E23 of the Consent, Tahmoor Coal is required to make publicly available information pertaining to Tahmoor Coal's general environmental performance against internal targets and external approvals criteria.

The following information is available on Tahmoor Coal's Website:

- Tahmoor South Project EIS;
- All current statutory approvals for Tahmoor Mine;
- All approved strategies, plans and programs;
- Any proposed staging plans for the Tahmoor South Project;
- Minutes of TCCCC meetings;
- Regular reporting on the environmental performance;
- A comprehensive summary of the monitoring results of Tahmoor Mine;
- A summary of the current phase and progress of development at Tahmoor Mine;
- Contact details to enquire about Tahmoor Mine or to make a complaint;
- A complaints register updated on a monthly basis;
- A record of incidents and non-compliance notifications made to the Planning Secretary updated monthly;
- Annual Review documents;
- Independent Environmental Audits of the Tahmoor Mine, and Tahmoor Coal's response to the recommendations in the audits;
- Annual returns made under the National Greenhouse and Energy Reporting legislation;

- Environmental Protection Licence Annual Return; and
- Any other matter required by the Planning Secretary.

These reports are prepared in accordance with relevant guidelines and are published on Tahmoor Coal's website in accordance with the Tahmoor Website Procedure (TAH-HSEC-00221).

This Extraction Plan will be uploaded to the Tahmoor Coal Website following approval.

7.10.2 Tahmoor Colliery Community Consultative Committee

Information pertaining to Tahmoor Coal's general environmental performance against internal targets and external approvals criteria is reported to the community via the TCCCC.

The TCCCC was established in 2003 in response to the requirement for DA 67/98 Condition 47 to establish and operate a Community Consultative Committee in general accordance with DPE *Community Consultative Committee Guidelines: State Significant Projects (2016)*. The requirement for the TCCCC was renewed for the Tahmoor South Project in Condition A25 of the Consent.

The TCCCC currently meets on a quarterly basis and provides a forum of two-way communication between community representatives and Tahmoor Coal. Some of the information reported at the TCCCC includes:

- Progress at the mine and operational issues;
- Activities, projects and community initiatives;
- Subsidence monitoring and environmental performance; and
- Community complaints and the response to complaints.

As discussed in **Section 7.10.1,** the minutes from the TCCCC meetings is provided on the Tahmoor Coal Website.

8 Document Information

8.1 Referenced Documents

Reference information that is directly related to the development of this document or referenced from within this document is listed in **Table 22** below.

Table 23 Reference Information

Title
ATC Williams (2022), Tahmoor South LW S1A-S6A Water Management Plan – Myrtle Creek and Redbank Creek Remediation Program Review, May 2022, document 121171.17.
Department of Industry – Resources Regulator (2017), Managing Risks of Subsidence Guide: WHS (Mines and Petroleum Sites) Legislation.
Department of Planning (2008), Impacts of Underground Coal Mining on Natural Features in the Southern Coalfields: Strategic Review. NSW Department of Planning, July 2008.
Department of Planning and Environment (DPE) (2022), Extraction Plan Guidelines.
Douglas Partners (2024), Report on Geotechnical Assessment, Longwalls S1A to S6A, Bargo, prepared for Tahmoor Coal, June 2024.
Douglas Partners (2022), Detailed Slope Stability Assessment, Longwalls S1A to S6A, Bargo, prepared for Tahmoor Coal, September 2022.
Mine Subsidence Engineering Consultants (2022), Tahmoor South Project – Extraction Plan for Longwalls S1A to S6A: Subsidence ground movement predictions and subsidence impact assessments for natural features and surface infrastructure. Prepared for Tahmoor Coal, May 2022, document MSEC1192.
Mine Subsidence Engineering Consultants (2024), Tahmoor Coal – Modification 3 – Longwall S7A: The effect of the proposed addition of LW S7A on previous subsidence predictions and impact assessments. Prepared for Tahmoor Coal, March 2024, document MSEC1348, Rev B.
PSM (2025), Geotechnical Assessment – Longwall S7A. Prepared for Tahmoor Coal, Ocotber 2025, document PSM5522-013R.
SLR (2024). Tahmoor South Mod 3 – LW S7A Groundwater Impact Assessment. Prepared for Tahmoor Coal, May 2024.SLR (2022a), Tahmoor South - Baseline Private Bore Assessment Report, prepared for Tahmoor Coal, May 2022, document 310.30637.00000.
SLR (2022b), Tahmoor Extraction Plan LW S1A-S6A Land and Agricultural Resource Assessment, prepared for Tahmoor Coal, April 2022, document 630.12732.002.
SIMEC (2019), Tahmoor South Project Environmental Impact Statement, Volumes 1 and 7, dated January 2019.
SIMEC (2020a), Tahmoor South Project Amendment Report, including Appendices A to R and response to submissions, dated February 2020.
SIMEC (2020b), Tahmoor South Project Second Amendment Report, Appendices A to O and response to submissions, dated August 2020.
SIMEC (2020c), Additional information responses dated 14 September 2020 (including Appendices A to L), 23 October 2020 and 4 November 2020.
Tahmoor Coal (2022), Tahmoor South Domain, Longwalls South 1A to South 6A, Risk Assessment Report.
Waddington, A.A. and Kay, D.R., (2002). ACARP Management Information Handbook on the Undermining of Cliffs, Gorges and River Systems-Version 1. Developed from ACARP Research Projects C8005 and C9067, September 2002.

8.2 Related Documents

Related documents (internal documents) directly related to or referenced from this document are listed in **Table 24** below.

Table 24 Related Documents

Document Number	Document Title
TAH-HSEC-00375	Environmental Management Strategy
TAH-HSEC-00402	Rehabilitation Management Plan
TAH-HSEC-00124	Document and Record Control
TAH-HSEC-00171	Change Management Standard
TAH-HSEC-00229	Risk Management
TAH-HSEC-00014	WRAC Workplace Risk Assessment and Controls
TAH-HSEC-00189	Health and Safety Management Plan
TAH-HSEC-00416	Emergency Response Control Plan

Document Number	Document Title
TAH-HSEC-00155	Pollution Incident Response Management Plan
TAH-HSEC-00224	Notification of Environmental Pollution Incidents
TAH-HSEC-00120	Community Complaints and Enquiry Procedure
TAH-HSEC-00221	Tahmoor Website Procedure
TAH-HSEC-00360	LW S1A-S7A Extraction Plan Main Document
TAH-HSEC-00361	LW S1A-S7A Water Management Plan
TAH-HSEC-00362	LW S1A-S7A Land Management Plan
TAH-HSEC-00363	LW S1A-S7A Biodiversity Management Plan
TAH-HSEC-00364	LW S1A-S7A Heritage Management Plan
TAH-HSEC-00366	LW S1A-S7A Built Features Management Plan
TAH-HSEC-00365	LW S1A-S7A Public Safety Management Plan
TAH-HSEC-00367	LW S1A-S7A Subsidence Monitoring Plan

8.3 Glossary of Terms

Terms references to this document are provided below in **Table 24**.

Table 25 Glossary of Terms

Term	Definition
Adaptive management	Monitoring subsidence impacts and subsidence effects and, based on the results, modifying the mine plan as mining proceeds to ensure that the effects, impacts and/or associated environmental consequences remain within the predicted and designated ranges and in compliance with the conditions of the Project Approval.
Angle of draw	The angle of inclination from the vertical of the line connecting the goaf edge of the workings and the limit of subsidence (which is usually taken as 20 mm of subsidence).
Aquifer	A sub-surface rock formation containing water in recoverable quantities.
Block	A dimensional delineation of the mineral deposit; as in “a block of coal” or a “coal blocked out for extraction”.
Built features	Includes any building or work erected or constructed on land, including dwellings and infrastructure such as a formed road, street, path, walk, or driveway; any pipeline, water sewer, telephone, gas or other infrastructure service main.
Chain pillar	A block of coal left unmined between the longwall extraction panels.
Cliff	A continuous rock faces, including overhangs, having a minimum length of 20 m, a minimum height of 10 m and a minimum slope of 2 to 1, i.e. having minimum angles to the horizontal of 63°.
Closure	The reduction in the horizontal distance between the valley sides. The magnitude of closure, which is typically expressed in the units of mm, is the greatest reduction in distance between any two points on the opposing valley sides. It should be noted that the observed closure movement across a valley is the total movement resulting from various mechanisms, including conventional mining induced movements, valley closure movements, far-field effects, downhill movements and other possible strata mechanisms.
Coal face	The current working place for coal extraction.
Coal Preparation Plan (CPP)	Processing plant where coal is sized, washed and prepared for the market.
Coal seam	Naturally formed underground layer of coal.
Continuous miner	The electric powered cutting machine used to remove coal from the active mining face and load it into the shuttle car.
Conveyor	The means of transporting coal from the coal face to the underground bin or surface. It consists of a belt being driven by a motor over a roller assembly.
Cover depth (H)	The depth of coal seam from the ground surface in m. Cover depth is normally provided as an average over the area of the panel.

Term	Definition
Critical area	The area of extraction at which the maximum possible subsidence of one point on the surface occurs.
Curvature	Second derivative of subsidence, or the rate of change of tilt, and is calculated as the change in tilt between two adjacent sections of the tilt profile divided by the average length of those sections. Curvature is usually expressed as the inverse of the Radius of Curvature with the units of 1/km (km^{-1}), but the value of curvature can be inverted, if required, to obtain the radius of curvature, which is usually in km. Curvature can be either hogging (i.e. convex) or sagging (e.g. concave).
Development	The operations involved in preparing the coal seam for extraction.
Downcast	A shaft or other mine opening down to the underground workings in which fresh air from the surface passes.
Drift	An inclined access opening from the surface to the coal seam.
Exploration	The search for mineral deposits and the work done to prove or establish the extent of a mineral deposit.
Extracted seam	The thickness of coal that is extracted. The extracted seam thickness is thickness normally given as an average over the area of the panel.
Effective extracted seam thickness (T)	The extracted seam thickness modified to account for the percentage of coal left as pillars within the panel.
Face length	The width of the coalface measured across the longwall panel.
Far-field movements	The measured horizontal movements at pegs that are located beyond the longwall panel edges and over solid unmined coal areas. Far-field horizontal movements tend to be bodily movements towards the extracted goaf area and are accompanied by very low levels of strain.
First workings	The driving of headings (underground roadways) into the solid coal seam prior to the commencement of extraction. First workings do not result in surface subsidence.
Gate road	An underground roadway leading to a working place in longwall mining.
Goaf	The void created by the extraction of the coal into which the immediate roof layers collapse.
Goaf end factor	A factor applied to reduce the predicted incremental subsidence at points lying close to the commencing or finishing ribs of a panel.
Headings	An underground roadway formed in the direction of a development panel.
Horizontal displacement	The horizontal movement of a point on the surface of the ground as it settles above an extracted panel. Displacement is described by various parameters including horizontal tilt, horizontal curvature, mid-ordinate deviation, angular distortion and shear index.
Incremental subsidence	The difference between the subsidence at a point before and after a panel is mined. It is therefore the additional subsidence at a point resulting from the excavation of a panel.
Inflection point	The point on the subsidence profile where the profile changes from a convex curvature to a concave curvature. At this point the strain changes sign and subsidence is approximately one half of S max.
Longwall	A system of mining coal in which the seam is extracted on a broad front or long face using a coal shearer and the roof is supported by hydraulic roof supports.
Minor cliff	A continuous rock face, including overhangs, having a: • Minimum length of 20 metres and a height between 5 metres and 10 metres or maximum length of 20 metres and a minimum height of 20 metres; and • A minimum slope of 2 in 1 (>63.4°)
Mitigation measures	Subsidence management measures which aim to reduce subsidence impacts, usually implemented prior to or during mining.
Overlap adjustment factor	A factor that defines the ratio between the maximum incremental subsidence of a panel and the maximum incremental subsidence of the panel if it were the first panel in a series.

Term	Definition
Panel or longwall panel	The plan area of coal extraction, or a block of coal to be mined by longwalls defined by gate roads and coal seam thickness.
Panel length (L)	The longitudinal distance along a panel measured in the direction of mining from the commencing rib to the finishing rib.
Panel width (Wv)	The transverse distance across a panel, usually equal to the face length plus the widths of the roadways on each side.
Panel centre line	An imaginary line drawn down the middle of the panel.
Pillar	A block of coal left unmined.
Pillar width (Wpl)	The shortest dimension of a pillar measured from the vertical edges of the coal pillar, i.e. from rib to rib.
Remediation measures	Subsidence management measures which aim to repair any adverse effects of subsidence, usually implemented after mining.
Risk	The chance of something happening that will have an impact on objectives. It is measures in terms of consequence and likelihood.
Rock face feature	A rock face having a: • Minimum length of 20 metres and heights between 3 metres and 5 metres, or maximum length of 20 metres and a minimum height of 5 metres; and • A minimum slope of 2 in 1 (>63.4°).
Run of mine (ROM)	Raw coal production, or the unprocessed mined coal that is conveyed to the CPP. ROM may consist of coal and rock.
Safe, serviceable and Repairable	Safe means no danger to users who are present; serviceable means available for its intended use; repairable means damaged components can be repaired economically.
Second workings	Extraction of coal by longwall mining that may result in surface subsidence.
Shaft	A vertical opening connecting the surface with the underground workings.
Shear deformations	The horizontal displacements that are measured across monitoring lines and these can be described by various parameters including; horizontal tilt, horizontal curvature, mid-ordinate deviation, angular distortion and shear index.
Steep slopes	An area of land having a gradient between 1 in 3 (33% or 18.3°) and 2 in 1 (200% or 63.4°).
Strain	The change in the horizontal distance between two points divided by the original horizontal distance between the points, i.e. strain is the relative differential displacement of the ground along or across a subsidence monitoring line. Strain is dimensionless and can be expressed as a decimal, a percentage or in parts per notation. Tensile Strains are measured where the distance between two points or survey pegs increases and Compressive Strains where the distance between two points decreases. Whilst mining induced strains are measured along monitoring lines, ground shearing can occur both vertically, and horizontally across the directions of the monitoring lines.
Sub-critical area	An area of panel smaller than the critical area.
Subsidence	The vertical movement of a point on the surface of the ground as it settles above an extracted panel, but, 'subsidence of the ground' in some references can include both a vertical and horizontal movement component. The vertical component of subsidence is measured by determining the change in surface level of a peg that is fixed in the ground before mining commenced and this vertical subsidence is usually expressed in units of mm. Sometimes the horizontal component of a peg's movement is not measured, but in these cases, the horizontal distances between a particular peg and the adjacent pegs are measured.
Subsidence effects	The deformations of the ground mass surrounding a mine, sometimes referred to as 'components' or 'parameters' of mine subsidence induced ground movements, including vertical and horizontal displacements, tilts, curvatures, strains, upsidence and closure.

Term	Definition
Subsidence impacts	The physical changes or damage to the fabric or structure of the ground, its surface and environmental features, or built structures that are caused by the subsidence effects. These impacts considerations can include tensile and shear cracking of the rock mass, localised buckling of strata, bed separation, rock falls, collapse of overhangs, failure of pillars, failure of pillar floors, dilation, slumping and also include subsidence depressions or troughs.
Subsidence consequences	The knock-on results of subsidence impacts, i.e. any change in the amenity or function of a natural feature or built structure that arises from subsidence impacts. Consequence considerations include public safety, loss of flows, reduction in water quality, damage to artwork, flooding, draining of aquifers, the environment, community, land use, loss of profits, surface improvements and infrastructure. Consequences related to environmental features are referred to as environmental consequences.
Super-critical area	An area of panel greater than the critical area.
Tilt	The change in the slope of the ground as a result of differential subsidence, and is calculated as the change in subsidence between two points divided by the horizontal distance between those points. Tilt is, therefore, the first derivative of the subsidence profile. Tilt is usually expressed in units of mm/m. A tilt of 1 mm/m is equivalent to a change in grade of 0.1 %, or 1 in 1000.
Total subsidence, tilts, curvatures and strains	Accumulated parameters after the completion of each longwall.
Travelling subsidence, tilts, curvatures and strains	Transient movements as the longwall extraction face mines directly beneath a given point.
Upcast	A shaft or other mine opening through which air returns to the surface after ventilating the underground workings.
Uplift	An increase in the level of a point relative to its original position.
Upsidence	Upsidence results from the dilation or buckling of near-surface strata at or near the base of the valley. The term uplift is used for the cases where the ground level is raised above the pre-mining level, i.e. when the upsidence is greater than the subsidence. The magnitude of upsidence, which is typically expressed in the units of mm, is the difference between the observed subsidence profile within the valley and the conventional subsidence profile which would have otherwise been expected in flat terrain.
Vertical displacement	Vertical downward movements of the ground surface caused by underground coal mining.
Valley related movements	Valley bulging movements are a natural phenomenon, resulting from the formation and ongoing development of the valley. The potential for these natural movements are influenced by the geomorphology of the valley. Valley related movements can be caused by or accelerated by mine subsidence as the result of a number of factors, including the redistribution of horizontal in situ stresses and down slope movements. Valley related movements are normally described by the parameters upsidence, closure, compressive strains and tensile strains.

8.4 Abbreviations

Abbreviations used in this document are provided below in **Table 26.**

Table 26 Abbreviations

Abbreviation	Definition
ACARP	Australian Coal Association Research Program
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ARTC	Australian Rail Track Corporation
BCD	Department of Planning and Environment – Biodiversity and Conservation Division (formerly Biodiversity, Conservation and Science)

Abbreviation	Definition
	Now known as NSW DPHI Environment and Heritage
BCS	Department of Planning and Environment - Biodiversity, Conservation and Science (now Biodiversity and Conservation Division) Now known as NSW DPHI Environment and Heritage
BFMP	LW S1A-S7A Built Features Management Plan
BMP	LW S1A-S7A Biodiversity Management Plan
CAMP	Corrective Action Management Plan
CCL	Consolidated coal lease
CHPP	Coal handling and preparation plant
Crown Lands	NSW Department of Planning and Environment – Crown Lands Division Now known as DPHI Crown Lands
Commonwealth DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water Formerly known as Commonwealth Department of Agriculture, Water and the Environment (DAWE)
DA	Development Application
DAWE	Commonwealth Department of Agriculture, Water and the Environment Now known as Commonwealth Department of Climate Change, Energy, the Environment and Water (Commonwealth DCCEEW)
DPE	NSW Department of Planning and Environment Formerly known as NSW Department of Planning, Industry and Environment (DPIE) Now known as NSW Department of Planning, Housing and Infrastructure (DPHI)
DPIE	NSW Department of Planning, Industry and Environment (former) Now known as NSW Department of Planning, Housing and Infrastructure (DPHI)
DPE Crown Lands	NSW Department of Planning and Environment – Crown Lands Now known as NSW Department of Planning, Housing and Infrastructure (DPHI) – Crown Lands
DPE Water	NSW Department of Planning and Environment – Water Now known as NSW Department of Climate Change, Energy, the Environment and Water - Water
DPHI	NSW Department of Planning, Housing and Infrastructure Formerly part of NSW Department of Planning and Environment
DPI	NSW Department of Primary Industries
DPI Agriculture	NSW Department of Primary Industries – Agriculture
DSNSW	Dams Safety NSW
E&C	Environment and community
EEC	Endangered Ecological Community
EES	NSW Department of Planning and Environment – Environment, Energy and Science Group Now known as NSW DPHI Environment and Heritage
EIS	Environmental Impact Statement
EMS	Environmental Management System
EMSF	Environmental Management System Framework
EPA	NSW Environment Protection Authority
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence

Abbreviation	Definition
ERG	Tahmoor Coal Environmental Response Group
Ha	Hectares
HMP	LW S1A-S7A Heritage Management Plan
HSEC	Health, Safety, Environment and Community
IAPUM	Independent Advisory Panel for Underground Mining
IESC	Commonwealth Independent Expert Scientific Committee
IPM	Incremental Profile Method
km	Kilometre/s
LGA	Local Government Area
LMP	LW S1A-S7A Land Management Plan
LW	Longwall
LW S1A-S6A	Longwalls South 1A to South 6A
LW S1A-S7A	Longwalls South 1A to South 7A
m	Metre/s
MEG	Department of Regional NSW – Mining Exploration and Geoscience
Masl	Metres above sea level
MG	Main Gate
mm	Millimetre
ML	Mining Lease
MSEC	Mine Subsidence Engineering Consultants
NRAR	NSW Industry – Land & Water – Natural Resources Access Regulator – East
NSW	New South Wales
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water Formerly part of NSW Department of Planning and Environment
OEH	NSW Office of Environment and Heritage Now known as NSW DPHI Environment and Heritage
PCBCs	Persons conducting a business or undertaking
PSMP	LW S1A-S7A Public Safety Management Plan
ONRSR	NSW Office of the National Rail Safety Regulator
QA/QC	Quality assurance and control
RAPs	Registered Aboriginal Parties
Resources Regulator	Department of Regional NSW – Resources Regulator
ROM	Run of Mine
RRG	Rail Response Group
SHR	State Heritage Register
SIMEC	SIMEC Mining Division
Spatial Services	NSW Department of Finance, Services and Innovation – Spatial Services
SRG	Structural Response Group
SSD 8445	Tahmoor South Project Development Consent

Abbreviation	Definition
SDWC	Sydney Drinking Water Catchment
T	Tonnes
Tahmoor Mine	Tahmoor Coal Mine
Tahmoor Coal	Tahmoor Coal Pty Ltd
TARP	Trigger Action Response Plan
TCCCC	Tahmoor Colliery Community Consultative Committee
TDS	Total dissolved salts
TfNSW	Transport for NSW
TG	Tailgate
Western Domain	The area to the north-west of the Main Southern Rail within ML 1376 and ML 1539
WHS	Work Health and Safety
WHS Act	*Work Health and Safety Act 2011*
WHS Regulation	*Work Health and Safety Regulation 2017*
WHSMP Act	*Work Health and Safety (Mines and Petroleum Sites) Act 2013*
WHSMP Regulation	*Work Health and Safety (Mines and Petroleum Sites) Regulation 2022*
WLEP	*Wollondilly Local Environment Plan 2011*
WMP	LW S1A-S7A Water Management Plan
WSC	Wollondilly Shire Council

8.5 Change Information

Full details of the document history are recorded below in **Table 27**.

Table 27 Document History

Version	Date Reviewed	Review Type (Major/Minor)	Reviewed By	Change Summary
1.0	May 2022	Major	Zina Ainsworth, Charlie Wheatley Malcolm Waterfall, Peter Vale	New Document
1.1	May 2022	Minor	Zina Ainsworth, Charlie Wheatley Malcolm Waterfall, Peter Vale	Minor formatting changes made to document and TARP.
2.0	September 2022	Major	Charlie Wheatley, Zina Ainsworth	Updated document following consultation with DPE, government agencies and the Independent Advisory Panel for Underground Mining.
3.0	January 2023	Major	April Hudson, Zina Ainsworth	Review in accordance with Condition E7(e) following the commencement of first and second workings (18 October 2022) of the Consent SSD 8445.
4.0	June 2023	Major	April Hudson, Zina Ainsworth	Review in accordance with Condition E7(b) following the submission of an Annual Review (31 March 2023), Condition E7(c) following the submission of an Independent Environmental Audit (2 June 2023) and Condition E7 (d) following the approval of any modification (Modification - 13 June 2023) of the Consent SSD 8445.
5.0	June 2024	Major	April Hudson, Zina Ainsworth	Review in accordance with Condition E7(b) following the submission of an Annual Review (28 March 2024).
6.0	February 2025	Major	Nick Le Baut, Zina Ainsworth	Review following the approval of Amendment 2 (shortening of LWS4A) to the Tahmoor South LWS1A-S6A Extraction plan (11 November 2024).
7.0	October 2025	Major	Nick Le Baut, Zina Ainsworth	Review in accordance with Condition E7(d) following the approval of Modification 3 (26 May 2025) and Condition E7(b) following the submission of an annual review (30 September 2025).

8.6 Document Distribution

This Extraction Plan and associated document have been distributed according to **Table 27**.

Table 28 Distribution List for Extraction Plan

Agency	Contact Person	Position	Email Address / Portal
DPHI	(Planning Portal)	(Planning Portal)	(https://www.planningportal.nsw.gov.au/major-projects)
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DPHI - Crown Lands	(General email)	(General email)	cl.enquiries@crownland.nsw.gov.au
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Agency	Contact Person	Position	Email Address / Portal
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APPENDIX A – Subsidence Predictions and Impact Assessment Report (MSEC, 2022)

APPENDIX B – Modification 3 – Longwall S7A - Subsidence Predictions and Impact Assessment Report (MSEC, 2024)

APPENDIX C – Master Trigger Action Response Plan

APPENDIX D – Letter of Endorsement