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SIMEC

PUBLIC SAFETY MANAGEMENT PLAN – TAHMOOR SOUTH DOMAIN – LONGWALLS SOUTH 1A – SOUTH 7A

Tahmoor Coal Pty Ltd

Document Control

Applicant:	Tahmoor Coal Pty Ltd
Mine:	Tahmoor Coal Mine
Development Approval:	SSD 8445
Mining Leases:	CCL716 and CCL747
Document Title:	Tahmoor South Domain Longwalls South 1A – South 7A Public Safety Management Plan
Document Number:	TAH-HSEC-00365
Publication Date:	October 2025
Document Status:	Final (Version 7)
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Table of Contents

Table of Contents **3**
List of Figures **5**
List of Tables **5**
1 Introduction **6**
1.1 Background 6
1.2 Purpose 6
1.3 Scope 6
2 Regulatory Requirements **10**
2.1 Project Approval 10
2.1.1 Development Consent Conditions 10
2.1.1.1 Extraction Plan Requirements 10
2.1.1.2 Management Plan Requirements 13
2.1.2 EIS Commitments 14
2.1.3 Extraction Plan Guideline 14
2.2 Relevant Legislation and Policies 15
2.2.1 Work, Health and Safety Legislation 15
2.2.2 Work Health and Safety (Mines and Petroleum Sites) Regulation 2022 15
2.2.3 Subsidence Principal Hazard Management Plan 16
2.3 Other Leases and Licences 16
*Lease in process of renewal for FY2026 17
2.4 Stakeholder Consultation 17
2.4.1 Consultation to Date 17
3 Existing Environment **19**
3.1 Regional Context 19
3.2 Identification of Subsidence Hazards 19
4 Risk Management **20**
4.1 Risk Management Process 20
4.2 Subsidence Guidelines 20
4.3 Subsidence Risk Assessments 21
5 Predicted Subsidence Impacts and Environmental Consequences **22**
5.1 Built Features 22
5.2 Cliffs and Steep Slopes 23
5.2.1 Natural Cliffs and Steep Slopes 25
5.3 Subsidence Deformations 25
5.4 Other Subsidence Impacts 26
6 Subsidence Monitoring Program **27**

6.1 Performance Measures and Indicators 27
6.2 Monitoring Program 27
6.3 Baseline Monitoring to Support Future Extraction Plans 28
7 Subsidence Management Strategies 29
7.1 Mine Design Considerations 29
7.2 Mitigation Measures and Corrective Management Actions 29
7.2.1 Public Safety Management 29
7.2.1.1 Stage One 30
7.2.1.2 Stage Two 30
7.2.1.3 Stage Three 31
7.2.1.4 Stage Four 31
7.2.2 Management Measure Effectiveness 31
7.2.3 Remediation Measures 31
7.3 Trigger Action Response Plan 31
7.3.1 Implementation of Monitoring Program and TARP Requirements 32
7.4 Contingency Plan 33
7.5 Adaptive Management Strategies 33
7.5.1 Adaptive Management for Public Safety 33
7.5.2 Continuous Improvement 33
8 Implementation and Reporting 34
8.1 General Requirements 34
8.2 Reporting Requirements 34
8.2.1 Performance Measure Exceedance 34
8.2.2 Specific Reporting for Public Safety 35
8.2.3 Plan Audit 35
8.2.4 Plan Review 35
8.3 Roles and Responsibilities 36
9 Document Information 37
9.1 Referenced Documents 37
9.2 Related Documents 37
9.3 Glossary of Terms 37
9.4 Abbreviations 38
9.5 Change Information 39
APPENDIX A – LW S1A-LW S6A Risk Assessment 40
APPENDIX B – LW S7A Risk Assessment 41

List of Figures

Figure 1 Regional Context 8
Figure 2 Extraction Plan Study Area 9
Figure 3 Continuous Improvement Model 33

List of Tables

Table 1 Key Conditions from SSD 8445 regarding Public Safety 11
Table 2 Management Plan Requirements 13
Table 3 Extraction Plan Guideline Requirements for Key Component Plans 14
Table 4 Mining Lease 17
Table 5 Environmental Approvals and Licences 17
Table 6 Consultation to Date 17
Table 7 Subsidence Performance Measures and Performance Indicators for Public Safety 27
Table 8 Reference Information 37
Table 9 Related Documents 37
Table 10 Abbreviations 38
Table 11 Document History 39

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) for the extraction of up to 4 Mtpa of ROM coal, with a total of up to 35 Mt of ROM coal proposed to be extracted over a 10-year period.

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.**

1.2 Purpose

This Public Safety Management Plan has been prepared to support an Extraction Plan for the secondary extraction of coal from LW S1A-S7A.

The purpose of this management plan is to provide a framework for Tahmoor Coal personnel to ensure that compliance is achieved with relevant internal and external regulatory requirements related to public safety within the Extraction Plan Study Area. The plan ensures that impacts on the community are minimised and managed within a structured framework.

This plan is to ensure compliance with Development Consent (SDD 8445) (the Consent) Condition C8.

1.3 Scope

The Study Area applicable to this management plan consists of a combination of the predicted 20 millimetre (mm) Total Subsidence Contour and the 35° Angle of Draw Line as shown in **Figure 2**.

This management plan:

- Addresses specific requirements set by Development Consent SSD 8445, EIS Commitments, Leases, Licences, and regulatory requirements (refer to **Section 2**);
- Addresses comments received during stakeholder consultation (refer to **Section 0**);

- Provides an overview of the existing environment (refer to **Section 3**);
- Provides details on the predicted subsidence impacts and potential safety consequences from the extraction of LW S1A-S7A (refer to **Section 5**);
- Outlines the monitoring program for potential subsidence-related impacts for public safety (refer to **Section 6**);
- Outlines the management strategies for potential subsidence-related impacts for public safety (refer to **Section 7**);
- Outlines the strategies for implementation, reporting, and review of this document (refer to **Section 8**);
- Provides document information (refer to **Section 8**); and
- Provides Trigger Action Response Plans (TARPs) to be implemented to manage and protect the public within the Study Area (refer to **Section 7.3**).

This management plan has been prepared based on the contents of the following technical reports:

- Built Features Management Plan;
- Land Management Plan; and
- Subsidence Predictions and Impact Assessments Report (MSEC, 2022).
- Tahmoor Coal – Modification 3 – Longwall South 7A (MSEC, 2024)

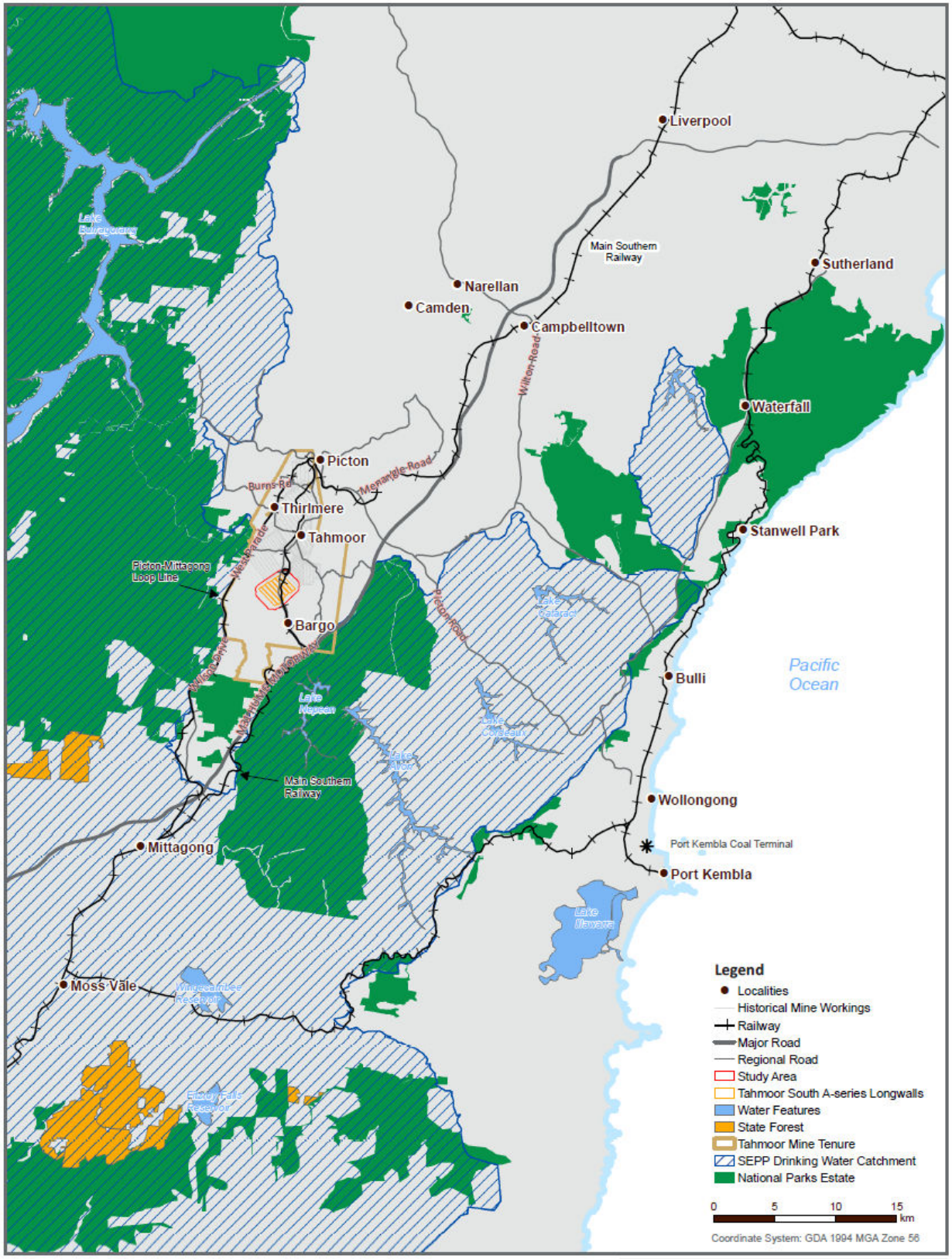

Figure 1 Regional Context

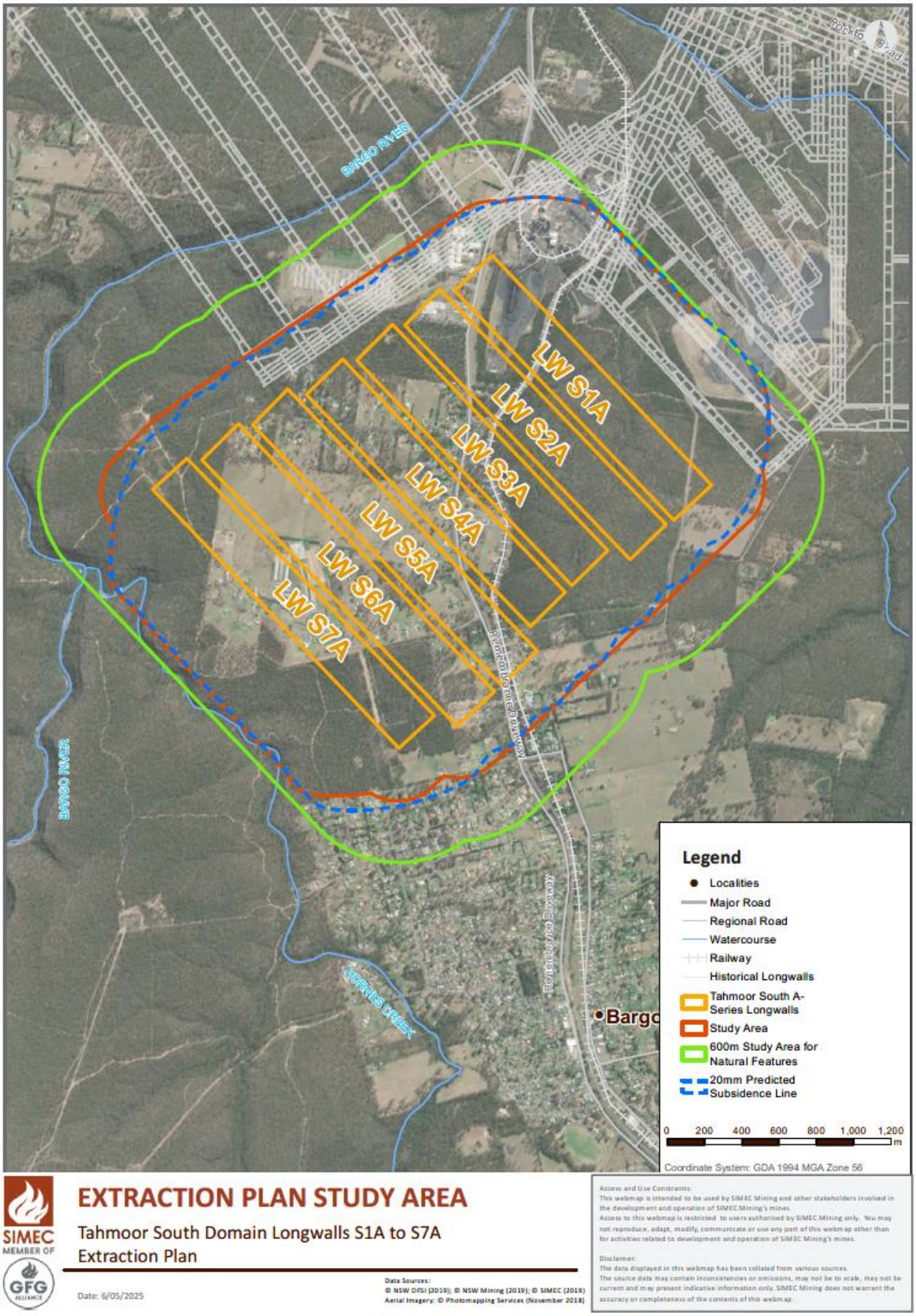

Figure 2 Extraction Plan Study Area

2 Regulatory Requirements

2.1 Project Approval

2.1.1 Development Consent Conditions

2.1.1.1 Extraction Plan 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 is maintained by Tahmoor Coal in a compliance database.

LW S1A-S7A will be extracted in the Tahmoor South mining area under Development Consent SSD 8445, as discussed further in Section 3.2.1 of the Extraction Plan Main Document. 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 1.**

SSD 8445 has been modified on three 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.
- Modification 3 - Inclusion of an additional longwall panel (Longwall South 7A (LW S7A)) to the existing approved mine plan, approved on 26 May 2025.

Approval (EPBC 2017/8084) was also 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).

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 this longwall are discussed in a separate document and further discussion in this document have been omitted. No changes to the proposed monitoring program as presented in this document have resulted from the longwalls shortening.

Table 1 Key Conditions from SSD 8445 regarding Public Safety

<table>
<tr><th>Condition Reference</th><th>Condition Requirement</th><th>Where 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• Picton Weir
• 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 CB).
• 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>Discussed in Section 5 and Section 6.
Covered within the Built Features Management Plan.
It is noted that the Wirrimbirra Sanctuary is now referred to as the Australian Wildlife Sanctuary.
It is also noted that the Bargo Waste Management Centre, M31 Motorway, Moomba to Sydney Gas Pipeline, and the Gorodok Ethane Pipelines are not located within the Study Area of this Extraction Plan.</td></tr>
</table>

Condition Reference	Condition Requirement	Where Addressed
C8	**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:	Noted. This management plan is part of the LW S1A-S7A Extraction Plan Application.
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 5**
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 6.1**
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;	This Management Plan
C8(g)(viii)	Trigger Action Response Plans addressing all features in Table 7 and Table 8, which contain:	**Section 7.3**
	• appropriate triggers to warn of increased risk of exceedance of any performance measure;	
	• specific actions to respond to high risk of exceedance of any performance measure to ensure that the measure is not exceeded;	
	• an assessment of remediation measures that may be required if exceedances occur and the capacity to implement the measures; and	
	• 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	
C8(g)(ix)	Contingency Plan that expressly provides for:	**Section 7.4**
	• 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;	
	• an assessment of remediation measures that may be required if exceedances occur and the capacity to implement those measures;	
C8(i)	include a program to collect sufficient baseline data for future Extraction Plans.	**Section 6.3**
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;	**Section 7.5**

Condition Reference	Condition Requirement	Where Addressed
	(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.	

2.1.1.2 Management Plan Requirements

Condition E5 of the Consent outlines the general requirements for all management plans. **Table 2** outlines the requirements under this condition and identifies where these requirements have been addressed.

Table 2 Management Plan Requirements

Condition Reference	Condition Requirement	Where Addressed
E5	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	Noted.
(a)	a summary of relevant background or baseline data;	**Section 3**
(b)	details of:	NA
(b)(i)	the relevant statutory requirements (including any relevant approval, licence or lease conditions);	**Sections 2.1, 2.2 and 2.3**
(b)(ii)	any relevant limits or performance measures and criteria; and	**Section 6.1**
(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 6.1**
(c)	any relevant commitments or recommendations identified in the document/s listed in condition A2(c);	**Section 2.1.2**
(d)	a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	**Section 6**
(e)	a program to monitor and report on the:	NA
(e)(i)	impacts and environmental performance of the development; and	**Section 8.2**
(e)(ii)	effectiveness of the management measures set out pursuant to condition E5(d);	**Section 7.2.2**
(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 7.4**
(g)	a program to investigate and implement ways to improve the environmental performance of the development over time;	**Section 7.5**
(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 8**
(h)(ii)	complaint; or	**Section 8**
(h)(iii)	failure to comply with other statutory requirements;	**Section 8**
(i)	public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and	**Section 8**
(j)	a protocol for periodic review of the plan.	**Section 8**

2.1.2 EIS Commitments

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.

There are no specific EIS commitments relevant to this management plan. Please refer to the Built Features Management Plan and the Land Management Plan for EIS commitments relevant to built and natural features.

2.1.3 Extraction Plan Guideline

This management plan has been updated in accordance with the NSW Department of Planning and Environment (DPE) *Extraction Plan Guideline* (DPE, 2022), as detailed in Table 3.

Table 3 Extraction Plan Guideline Requirements for Sub-Plans

Extraction Plan Guideline Content Requirements for Sub-Plans	Where Addressed
A short overview of relevant landscape features, heritage sites, environmental values, built features or other values to be managed under the sub-plan.	**Section 3**
Setting out the consent's performance measures directly relevant to the features or values to be managed under the sub-plan.	**Section 6.1**
Setting out clear objectives to ensure the delivery of the performance measures and all other relevant statutory requirements.	**Section 2.1**
Setting out performance indicators to ensure compliance with the performance measures and statutory requirements.	**Section 6.1**
A description of the relevant features or values to be managed under the sub-plan and their significance.	**Section 3**
A description of all currently predicted subsidence impacts and environmental consequences relevant to the features and values to be managed under the sub-plan.	**Section 5**
A description of all measures planned to remediate these impacts and/or consequences, including any measures proposed to ensure that impacts and/or consequences comply with performance measures and/or the mining company's commitments.	**Section 7.2.3**
A description of the baseline monitoring network and baseline monitoring results, including pre-subsidence photographic surveys of key landscape features and key heritage sites that may be subject to significant subsidence impacts (such as significant watercourses, swamps and Aboriginal heritage sites).	**Section 3**
A description of the proposed environmental monitoring of subsidence impacts and environmental consequences.	**Section 6**
A description of proposed monitoring of remediation measures.	**Section 7.2.3**
A description of adaptive management.	**Section 7.5**
Listing responsibilities for implementation of the plan.	**Section 8.4**
An attached Trigger, Action, Response Plan.	Discussed in **Section 7.3** – refer to Built Features Management Plan and

Extraction Plan Guideline Content Requirements for Sub-Plans	Where Addressed
	Land Management Plan for specific TARPs.

2.2 Relevant Legislation and Policies

2.2.1 Work, Health and Safety Legislation

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. The responsibilities are legislated in the *Work Health and Safety Act 2011* and the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and associated regulations (collectively referred to as the 'WHS laws').

As outlined in the Guide by the NSW Department of Trade & Investment Mine Safety:

"a PCBU must manage risks to health and safety associated with mining operations at the mine by:

- *complying with any specific requirements under the WHS laws;*
- *identifying reasonably foreseeable hazards that could give rise to health and safety risks;*
- *ensuring that a competent person assesses the risk;*
- *eliminating risks to health and safety so far as is reasonably practicable;*
- *minimising risks so far as is reasonably practicable by applying the hierarchy of control measures, any risks that are not reasonably practical to eliminate;*
- *maintaining control measures; and*
- *reviewing control measures.*

The mine operator's responsibilities include developing and implementing a safety management system that is used as the primary means of ensuring, so far as is reasonably practicable:

- *the health and safety of workers at the mine, and*
- *that the health and safety of other people is not put at risk from the mine or work carried out as part of mining operations."*

Detailed guidelines have also been released by the Department of Regional NSW - Resources Regulator (DPE, 2017).

2.2.2 Work Health and Safety (Mines and Petroleum Sites) Regulation 2022

The Work Health and Safety (Mines and Petroleum Sites) Regulation 2022 commenced on 1 February 2015 and was updated on 1 September 2022 and contains specific regulations in relation to mine subsidence. Clause 18 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2022 requires the operator of a mine to establish a Safety Management System (SMS) for the mine.

A SMS for a mine is the primary means of ensuring the safe operation of a mine. It brings together a number of procedures and policies to enable a mine operator to follow a systematic approach to achieving and monitoring an effective level of health and safety.

The SMS is used as the primary means of ensuring the health and safety of workers at the mine.

Establishing an SMS requires a mine operator to:

- Identify all Principal Mining Hazards (PMH);
- Assess the risks;
- Prepare a Principal Hazard Management Plan (PHMP) for each PMH; and
- Prepare Principal Control Plans (PCP).

Part 3 Division 2 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2022 requires the development of PHMP, which requires the mine operator to:

- Identify all principal hazards associated with mining operations or petroleum operations at the mine or petroleum site; and
- 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.

Under Clause 4, subsidence is identified as a PMH requiring a PHMP.

2.2.3 Subsidence Principal Hazard Management Plan

Tahmoor Coal maintains a Subsidence Principal Hazard Management Plan that is reviewed, revised, and updated prior to the commencement of each longwall.

The following factors should be considered when identifying, investigating, and analysing subsidence hazards:

- The characteristics of all relevant surface and subsurface features, including any known future developments (e.g. sub-divisions or other improvements) within the area where risk management is required;
- The characteristics of the mining operation, including the rate, method, layout, schedule and sequence of mining operations, the thickness of the seam to be mined, extraction height and cover depth;
- The characteristics of any previously excavated or abandoned workings that may interact with any proposed or existing mine workings;
- The existence, distribution, geometry and stability of significant voids, standing pillars or remnants within any old pillar workings that may interact with any proposed or existing mine workings;
- The characteristics of all relevant geological, hydrogeological, hydrological, geotechnical, topographical and climatic conditions of the area where risk management is required, including the structural, lithological and geotechnical characteristics of the overburden, inter-burden, floor and roof strata;
- The characteristics of any conditions that may cause elevated or abnormal subsidence or formation of sinkholes; and
- The predicted and actual nature, magnitude, location, distribution, timing and duration of subsidence.

2.3 Other Leases and Licences

All development consents, leases, licences, and other relevant approvals are stored in the Cority Compliance Management database, which is administered by both site and Liberty GFG Corporate. A summary of the relevant mining leases is provided in **Table 4.** A summary of other approvals and licences is provided in **Table 5**.

Table 4 Mining Lease

Lease	Title	Granted	Expires
CCL 716	Original Tahmoor Leases	15/06/1990 (Instrument of Renewal 16/8/2023)	13/03/2042
CCL 747	Bargo Mining Lease	23/05/1990 (Instrument of Renewal 16/05/2025)	06/11/2046
ML 1308	Small Western Lease to west of CCL 716	2/03/1993 (Instrument of Renewal 24/6/2014)	2/03/2035
ML 1376	Tahmoor North Lease	28/08/1995 (Instrument of Renewal 28/3/2023)	28/08/2043
ML 1539	Tahmoor North Extensions Lease	16/06/2003	16/06/2035
ML 1642	Pit-top and REA surface Mining Lease	27/08/2010 (Instrument of Renewal 17/10/2022)	27/08/2031

Table 5 Environmental Approvals and 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

2.4 Stakeholder Consultation

2.4.1 Consultation to Date

The Department of Regional NSW - Resources Regulator (Resources Regulator) was consulted during the preparation of this management plan. The feedback provided is summarised within **Table 6** below. This consultation table does not include consultation completed during the Extraction Plan review stage post submission to NSW Department of Planning and Environment (DPE, now NSW Department of Planning, Housing and Infrastructure (DPHI)).

A summary of all consultation undertaken for this extraction plan is provided in Section 2.1.2 of the Extraction Plan Main Document, and a copy of the incoming correspondence is also provided in Appendix C of the Extraction Plan Main Document.

Table 6 Consultation to Date

Consulted Stakeholder	Consultation Conducted	Outcomes of Consultation
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 the Subsidence Monitoring Plan for review on 15 May 2022. Tahmoor Coal recognised that Far Field assets would form part of the monitoring plan.

3 Existing Environment

3.1 Regional Context

Rural residences, villages and towns surround the mine. The nearest towns are Tahmoor and Bargo, and the nearest villages are Couridjah, Balmoral, Yanderra and Buxton. Land use in the region is characterised by a mix of village residential, rural residential, agriculture, vacant Crown land and conservation areas. The area predominantly exhibits gently undulating slopes; however, the topography becomes steeper near the Bargo and Nepean River valleys, north and west of the Tahmoor Mine, respectively. These steeper areas are also more densely forested.

3.2 Identification of Subsidence Hazards

Clause 34 of the Work Health and Safety Regulation (2017) requires that the duty holder (in this case Tahmoor Coal), in managing risks to health and safety, must identify reasonably foreseeable hazards that could give rise to risks to health and safety.

Mine subsidence hazards have been or will be identified, investigated, and analysed in a systematic manner by examining each aspect of the built features. Each of the aspects below could potentially experience mine subsidence movements that give rise to risks to the health and safety of people:

- Electrical infrastructure;
- Gas infrastructure;
- Potable water infrastructure;
- Sewer infrastructure;
- Telecommunications infrastructure;
- Railway infrastructure;
- Local roads, bridges and culverts;
- Mining infrastructure;
- Picton Weir;
- Built heritage structures;
- Residential structures, including houses, swimming pools and other structures;
- Structures for public amenity, commercial, industrial and agricultural purposes;
- Farm dams; and
- Groundwater bores.

A description of mine subsidence hazards identified that could give rise to risks to health and safety will be described in each of the individual Subsidence Management Plans for built features.

A Risk Assessment of Built Features likely to be affected from subsidence from the extraction of LW S1A to S6A was completed in 2021. A copy of this risk assessment is included in **Appendix A** and further discussed in **Section 4** below.

Following approval of Modification 3 (LW S7A), Tahmoor Coal has completed a risk assessment for built features likely to be affected by subsidence from the extraction of LW S7A in July 2025. A copy of this risk assessment is included in **Appendix B** and further discussed in **Section 4** below.

4 Risk Management

4.1 Risk Management Process

Effectively controlling risks at Tahmoor Mine requires Tahmoor Coal to follow a risk management process, which involves the four steps:

- Identify hazards – find out what could cause harm;
- Assess risks if necessary – understand the nature of the harm that could be caused by the hazard, how serious the harm could be and the likelihood of it happening;
- Control risks – eliminate the risk or, if this is not possible, minimise the risk through risk control measures; and
- Review – review control measures to ensure they are working as planned.

The framework utilised for the risk assessment is the risk management process outlined within AS/NZS ISO 31000.

Tahmoor Coal has developed and acted in accordance with a risk management process to manage potential hazards due to mine subsidence on built features. The risk management strategy has been reviewed and updated based on experiences gained during the mining of Longwalls 22 to 32 and Longwalls West 1 to West 4, Longwalls S1A to S3A and includes the following process:

- Regular consultation with owners and operators of built features before, during and after mining;
- Site-specific investigations;
- Implementation of mitigation measures following engineering inspections and assessments;
- Surveys and inspections during mining within the active subsidence area:
- Detailed visual inspections of built features;
- Ground surveys; and
- Specific ground surveys and visual inspections, where recommended by an engineer based on the inspections and assessments.

4.2 Subsidence Guidelines

The risk management process has been carried out in accordance with guidelines published by DPE (2022). The following main steps of subsidence risk management have been undertaken, in accordance with the guidelines:

- Identification and understanding of subsidence hazards;
- Assessment of risks of subsidence;
- Development and selection of risk control measures;
- Implementation and maintenance of risk control measures, and
- Continual improvement and change management.

Each of the above steps have been or will be conducted together with the following processes:

- Consultation, co-operation and co-ordination, and
- Monitoring and review.

The management plans for built features will document the risk control measures that are planned to manage risks to health and safety associated with the mining of LW S1A-S7A directly beneath or adjacent to built features in accordance with the WHS laws.

4.3 Subsidence Risk Assessments

Tahmoor Coal completed a risk assessment as part of the broader Extraction Plan process that included the risk assessment of built features likely to be affected by subsidence from the extraction of LW S1A-S6A..

Following approval of Modification 3 (LW S&7A), Tahmoor Coal has completed a risk assessment for built features likely to be affected by subsidence from the extraction of LW S7A in July 2025. A copy of this risk assessment is included in **Appendix B.**

Tahmoor Coal, in consultation with built feature owners, will build upon the risk assessment to assess in detail the likelihood of the identified hazards affecting health and safety, and the severity of potential health and safety consequences during the risk assessment as a group. The results of the risk assessment will be included in each of the individual Subsidence Management Plans for built features.

The identification and risk assessment process considers the location of built features relative to LW S1A-S6A, LW S7A and the associated timing and duration of the subsidence event.

Whilst mine subsidence predictions and extensive past experiences from previous mining at Tahmoor Coal will be considered, the identification and risk assessment process recognises that there are uncertainties in relation to predicting subsidence movements, and uncertainties in how mine subsidence movements may adversely impact built features. This includes the presence and influence of geological structures and valleys.

Tahmoor Coal will consider the outcomes of the hazard identification and risk assessment process when developing measures to manage potential impacts on the health and safety of people, and potential impacts on built features in consultation with stakeholders.

5 Predicted Subsidence Impacts and Environmental Consequences

5.1 Built Features

The primary risk associated with mining beneath built features is public safety.

Tahmoor Coal has extensive experience directly mining beneath or adjacent to built features, including houses and civil structures, public infrastructure, commercial and retail properties, local roads and bridges, and the Main Southern Railway.

Tahmoor Coal has implemented extensive subsidence and mitigation measures prior to, during and after mining to ensure that the health and safety of people have not been put at risk due to mine subsidence. People have not been exposed to immediate and sudden safety hazards as a result of impacts that have occurred due to mine subsidence movements.

Built features identified within the Extraction Plan Study Area and far-field area include:

- Electrical infrastructure;
- Gas infrastructure;
- Potable water infrastructure;
- Sewer infrastructure;
- Telecommunications infrastructure;
- Main Southern Railway and Wellers Road Overbridge;
- Local roads, bridges and culverts;
- Bargo Cemetery;
- Picton Weir;
- Tahmoor Mine Site;*
- Wollondilly Anglican College;*
- Bargo Petroleum and Hill Top Pit Stop;*
- Inghams Bargo Breeder Farm and Turkey Farm;
- Tahmoor Garden Centre;
- Australian Wildlife Sanctuary;
- MKD Machinery;
- Canine Country Club;
- Bargo Valley Produce;
- Privately owned structures, including dwellings, pools and rural structures;
- Farm Dams;
- Groundwater bores; and
- Permanent survey marks.

(*) Denotes the Built Features not relevant to LW S4A to S7A. These built features have been managed during the extraction of LW S1A to LW S3A (LW S3A extraction was completed on 17 December 2024).

The subsidence impacts and management measures for all identified built features are outlined in detail within the Built Features Management Plan.

Detailed subsidence predictions are contained within the LW S1A-S6A Subsidence Predictions and Impact Assessments Report (MSEC, 2022) and Modification 3 – Longwall S7A subsidence Predictions and Impact Assessment Report (MSEC, 2024).

Monitoring requirements for each identified built feature are outlined with the Subsidence Monitoring Program.

The measures outlined within this plan for identified built features to specifically monitor safety risks include:

- Regular ground survey;
- Other electronic surveys;
- Site specific inspections of infrastructure and structural items;
- Visual inspections; and
- Photo monitoring points.

5.2 Cliffs and Steep Slopes

The primary risk associated with mining beneath cliffs and steep slopes is public safety.

Tahmoor Coal has extensive experience directly mining beneath or adjacent to cliffs and steep slopes. Tahmoor Coal has implemented extensive subsidence and mitigation measures prior to, during and after mining to ensure that the health and safety of people have not been put at risk due to mine subsidence. People have not been exposed to immediate and sudden safety hazards as a result of impacts that have occurred due to mine subsidence movements.

The major natural and constructed features in the study area are:

- Steep slopes, rocky outcrops and cliffs on the sides of valleys;
- Batters and cuttings of road and railway embankments;
- Slopes on farm dams; and
- Steep slopes around Tahmoor Mine infrastructure, including spoil heaps, coal piles and dams.

The LW S1A-S7A Land Management Plan discusses and manages natural cliffs and steep slopes and farm dams within the Study Area. The following constructed features will be managed in accordance with the following management plans:

- Constructed steep slopes and dams associated with the Tahmoor Mine site in accordance with the *Tahmoor Coal – LW S1A-S6A Management Plan for Potential Impacts to Tahmoor Mine Site* Report (*MSEC1247*);
- Constructed cuttings and batters along Remembrance Drive within the Study Area in accordance with the *Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Wollondilly Shire Council Infrastructure* Report (*MSEC1193*) Rev. D; and

- Constructed railway embankments along the Main Southern Railway within the Study Area in accordance with the *Tahmoor Coal – LW S1A-S7A Management Plan for Potential Impacts to Main Southern Railway* Report (*MSEC1201*) Rev.D.

5.2.1 Natural Cliffs and Steep Slopes

Subsidence can trigger slope failure in the form of local rock face instability due to tilting and bending of the rock mass beds. Overhangs and jointed planes are particularly susceptible to collapse leading to rock falls and toppling failures.

The subsidence impacts will take place over a broad area due to the depth of mining (between approximately 365 m to approximately 405 m) and changes in relief across the study area will generally be minor. Slope instability incidents may occur in the areas where large subsidence gradients occur.

The Land Management Plan reviewed the risk of slope instability in the Study Area and concluded that slope instability risk for natural steep slopes and cliffs is in the range of very low to moderate. The subsidence impacts and management measures for all identified natural steep slopes and cliffs are outlined in detail within the Land Management Plan, which includes specific consideration of subsidence risks and public safety for natural steep slopes and cliffs.

Slope instability risk for farm dams was assessed as very low to significant. However, due to the relatively low storage volumes of the farm dams and the likelihood that dam break will occur through incremental failure, it is unlikely that a dam break scenario will result in the loss of life. In the event of a dam break, damage to property and/or services could be expected.

Detailed subsidence predictions are contained within the LW S1A-S6A Subsidence Predictions and Impact Assessments Report (MSEC, 2022) and Tahmoor Coal - Modification 3 – Longwall S7A Subsidence Predictions and Impact Assessment Report (MSEC, 2024).

5.3 Subsidence Deformations

The management strategy for surface cracking within the Study Area is to identify any subsidence related impacts through monitoring prior to, during and post-secondary extraction.

The subsidence impacts and management measures for surface deformations are outlined in detail within the Land Management Plan.

Monitoring of surface deformations will be achieved by implementing the following measures:

- Visual inspections; and
- Photo monitoring.

In response to observed subsidence impacts causing surface deformations or surface cracking, Tahmoor Coal will implement the following management measures:

- Install warning signs and danger tape in the immediate area if the cracking is considered a public safety risk;
- Plan and undertake site rehabilitation as soon as practical to remove any ongoing public safety risks. Site rehabilitation measures could include:
  - Backfilling or grout filling of surface cracking;
  - Re-profiling of compression humps;
  - Infilling of pot-holes or subsidence-related undulations developed;
  - Re-direction of drainage; and
  - Installation of supports or securing of unstable structures or natural features, such as rock masses or cliffs.

5.4 Other Subsidence Impacts

The subsidence impact assessment (MSEC, 2022 and MSEC, 2024) concluded that subsidence related changes to the topography of the LW S1A-S7A Study Area are not expected to result in detectable increases in the flood inundation extent associated with Teatree Hollow and Teatree Hollow tributary. Therefore, the potential public safety risk from increased flooding from subsidence impact is consider negligible.

6 Subsidence Monitoring Program

6.1 Performance Measures and Indicators

The performance measure for public safety is provided in Table 8 of Condition C5 of SSD 8445 and are summarised in **Table 7.**

Table 7 Subsidence Performance Measures and Performance Indicators for Public Safety

Feature	Subsidence Performance Measures	Subsidence Performance Indicators
Public Safety	Negligible additional risk	This performance measure will be considered to be triggered if subsidence monitoring identifies a mining induced hazard to the public that cannot be controlled or managed.

For the purpose of this management plan, 'negligible' is defined as being 'so small and insignificant as to not be worth considering'. A negligible impact is viewed with regards to a long-term context, causing little or no impact. If a short-term impact causes a greater than negligible impact, the impact can still be considered negligible if the impacts are of a limited duration and are considered negligible when considered over the long term.

Based on the predicted subsidence impacts (MSEC, 2022 and MSEC, 2024), it is considered that the performance measures for public safety within the Study Area will be achieved during and after mining of LW S1A-S7A.

Performance measures for built and natural features are provided in Table 7 of Condition C1 and Table 8 of Condition C5 of SSD 8445 and are further discussed within the Built Features Management Plan and Land Management Plan.

6.2 Monitoring Program

A subsidence monitoring program for built and natural features has been implemented to monitor the impacts and consequences of subsidence effects during the extraction of LW S1A-S7A, as outlined in the Subsidence Monitoring Plan. The program will describe the inspection regimes, layout of monitoring points, parameters to be measured, monitoring methods and accuracy, timing and frequencies of surveys and inspections, and recording and reporting of monitoring results.

The program will be consistent with the monitoring commitments as described in all management plans that form part of this LW W1A-S7A Extraction Plan (including the Built Features Management Plan, Land Management Plan, and individual Subsidence Management Plans for built features).

The aim of the monitoring program is to identify where there is a risk of impact to built and natural features, and subsequently public safety, as a result of extraction activities. The monitoring program provides for the opportunity to record the condition of the site during the following three phases:

- Prior to Mining – baseline survey of the condition of the site before the commencement of mining;
- During Mining – monitoring of the condition of the site during active subsidence to establish whether there has been any change to the site or if changes have occurred from the effects of subsidence; and
- Post Mining – monitoring of the condition of the site after mining to identify whether there has been any change to the site in the period since mining, and to determine if the ground surface conditions have stabilised.

If an impact is identified to have occurred or is likely to occur, the relevant Trigger Action Response Plan (TARP) will then be referred to for the identification of appropriate mitigation strategies.

6.3 Baseline Monitoring to Support Future Extraction Plans

To assist in the preparation of future Extraction Plans, monitoring of built features, cliffs and steep slopes, and surface deformations as outlined in the Subsidence Monitoring Plan, Built Features Management Plan and Land Management Plan would provide sufficient baseline data.

Monitoring data collected during the mining of LW S1A-S7A would be used in the review of observed subsidence impacts for future Extraction Plans.

7 Subsidence Management Strategies

7.1 Mine Design Considerations

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 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; and
    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 LW 108B), 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.

7.2 Mitigation Measures and Corrective Management Actions

7.2.1 Public Safety Management

The primary risk associated with mining beneath structures is public safety. Historically, residents have not been exposed to immediate and sudden safety hazards as a result of impacts that occur due to mine subsidence movements in the NSW Coalfields, where the depths of cover were greater than 350 metres, such as the case above the proposed longwalls. This includes the recent experience at Tahmoor, which has affected more than 2,000 houses and civil structures.

Emphasis is placed on the words "immediate and sudden" as in rare cases, some structures have experienced severe impacts, but the impacts did not present an immediate risk to public safety as they developed gradually with ample time to relocate residents.

Tahmoor Coal proposes to continue its long-established practice of ensuring that built structures and natural features remain safe and serviceable at all times during mining.

Tahmoor Coal, in consultation with landowners, routinely studies the potential for impacts on built structures, other built features and natural features to develop management and mitigation measures. These studies draw upon the subsidence management expertise within Tahmoor Coal and its consultant structural, geotechnical, rail and subsidence engineers.

From 1 July 2025 pre-mining inspections (PMIs) are mandatory in certain areas of NSW where coal mining is expected to occur. PMIs will be conducted by Subsidence Advisory NSW, the government agency responsible for administering the *Coal Mine Subsidence Compensation Act 2017*.

The risk management process followed by Tahmoor Coal is implemented through a four-staged process, as described in the sections below.

7.2.1.1 Stage One

Regular consultation, cooperation, and coordination with the community before, during and after mining. This includes letters and door knocking to all residents of structures that will soon be affected by subsidence. The letters offer a free hazard identification inspection by a structural engineer and free survey marker installation by qualified surveyors.

7.2.1.2 Stage Two

Site-specific investigations, where they are necessary and appropriate, into the conditions of buildings and associated structures and their surrounding environment (where access is allowed). The site-specific investigations have been and will continue to be undertaken early so that there is adequate time, if required, to arrange additional inspections and/or surveys and implement any mitigation measures before mining-induced impacts are experienced.

For properties located directly above the first 300 m of the commencing end of a longwall, the investigations are targeted to be undertaken prior to extraction or at the latest, they will be undertaken prior to the first 200 m of extraction of the longwall.

The site-specific investigations include the following:

- Identification of structures from aerial photographs and kerbside inspections;
- Front of house risk and visual screening inspections by Tahmoor Coal in company with a structural engineer for all properties that are predicted to experience more than 20 mm of incremental vertical subsidence due to the extraction of each upcoming longwall. The purpose of the inspections is to identify hazards where access has not been granted by the landowner. In some cases, particularly in semi-rural and rural areas, it is difficult to inspect a structure that is remote from the street front. Where these cases involve properties that are located directly above a longwall, Tahmoor Coal has requested access to conduct a hazard identification inspection by a structural engineer;
- Tahmoor Coal will request access to conduct pre-mining geotechnical inspections of structures located on or immediately adjacent to steep slopes that are predicted to experience more than 20 mm of incremental vertical subsidence due to the extraction of each longwall;
- Tahmoor Coal will request access to conduct pre-mining hazard identification inspections by a structural engineer (where access is allowed by the landowner) to properties with structures that have been specifically targeted on the basis that may be more sensitive to mine subsidence movements. These include:
- Commercial and business establishments, public amenities and public utilities;
- Structures of heritage significance;
- Structures that are located above hidden creeks (none identified within the Study Area);

- Structures that are located above mapped geological structures (none identified within the Study Area);
- Structures that are located on or adjacent to steep slopes or that have been recommended for structural inspection by the geotechnical engineer;
- Structures that have been identified as being potentially unstable or unsafe by landowners (Stage One), or from the front of house inspections (Stage Two);
- Houses and units located outside the declared Mine Subsidence Districts; and
- Houses and units estimated to have been constructed prior to the declaration of the Bargo Mine Subsidence District.

7.2.1.3 Stage Three

Implementation of pre-mining mitigation measures following inspections by the geotechnical engineer and the structural engineer, in consultation and agreement with the landowner.

7.2.1.4 Stage Four

Surveys and inspections during mining within the active subsidence area:

- Detailed visual inspections and vehicle-based inspections along the streets;
- Ground surveys along the streets;
- Specific ground surveys for selected properties, where recommended by the geotechnical engineer or structural engineer due to their proximity to steep slopes or pre-existing condition;
- Visual inspections of residential structures that are either located on or adjacent to steep slopes, are in poor existing condition (based on the hazard identification inspections), have previously reported impacts, or where recommended by the Structures Response Group;
- Visual inspections of pool fences and gates where access is permitted; and
- Visual inspections of commercial, industrial and business establishments, public amenities and public utilities.

7.2.2 Management Measure Effectiveness

The effectiveness of the above management measures 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.

7.2.3 Remediation Measures

In the event that remediation of subsidence impacts occurs to major public assets, remediation will be undertaken by Tahmoor Coal in consultation with the relevant stakeholders and in accordance with asset owner management plans and, Built Features Management Plan and the Land Management Plan.

From 1 July 2025, changes to the *Coal Mine Subsidence Compensation Act 2017* commenced, and Subsidence Advisory NSW is the determining body and regulator for all mine subsidence claims. As a result of the claims process changes, Tahmoor Coal will adhere to directions and take actions as instructed to ensure public safety and serviceability is maintained.

7.3 Trigger Action Response Plan

A series of TARPs have been developed to address various components of built and natural features using the performance indicators for implementation during LW S1A-S7A mining, in accordance with Condition C8(g)(viii) of the Consent.

The primary actions of the TARP are to:

- Define appropriate trigger levels;
- Develop specific actions to respond to high risk of exceedance of any performance measure to ensure that the measure is not exceeded; and
- Present a plan in the event performance measures are exceeded or are likely to be exceeded and describe the management / corrective actions to be implemented (i.e. notifications to relevant agencies, revision in any Corrective Action Management Plan and/or =the Annual Review).

Refer to the Built Features Management Plan and the Land Management Plan for TARPs related to the management of potential public safety risks.

7.3.1 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 and reviewed by the Structural Response Group, (SRG) 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.

7.4 Contingency Plan

In accordance with Conditions C8(g)(ix) and E5(f) of the Consent, in the event that performance measures (in the form of pre-defined triggers) are considered to have been exceeded or are likely to be exceeded, a response will be undertaken in accordance with the TARPs provided within the Built Features Management Plan and the Land Management Plan. This response is a contingency plan that describes the management / corrective management actions which can be implemented where required to remedy the exceedance.

If a Corrective Action Management Plan is required in accordance with the TARPs, this plan will be prepared in accordance with Section 3.6.3 of the Extraction Plan Main Document.

The success of remediation measures / corrective management actions that have been implemented for any TARP exceedance would be reviewed as part of any Corrective Action Management Plan, and/or the Annual Review.

7.5 Adaptive Management Strategies

7.5.1 Adaptive Management for Public Safety

There are no adaptive management strategies currently proposed for the management of aquatic or terrestrial ecology in the Study Area.

7.5.2 Continuous Improvement

Tahmoor Coal have adopted the "Plan-Do-Check-Act" model as shown in **Figure 3**. 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.

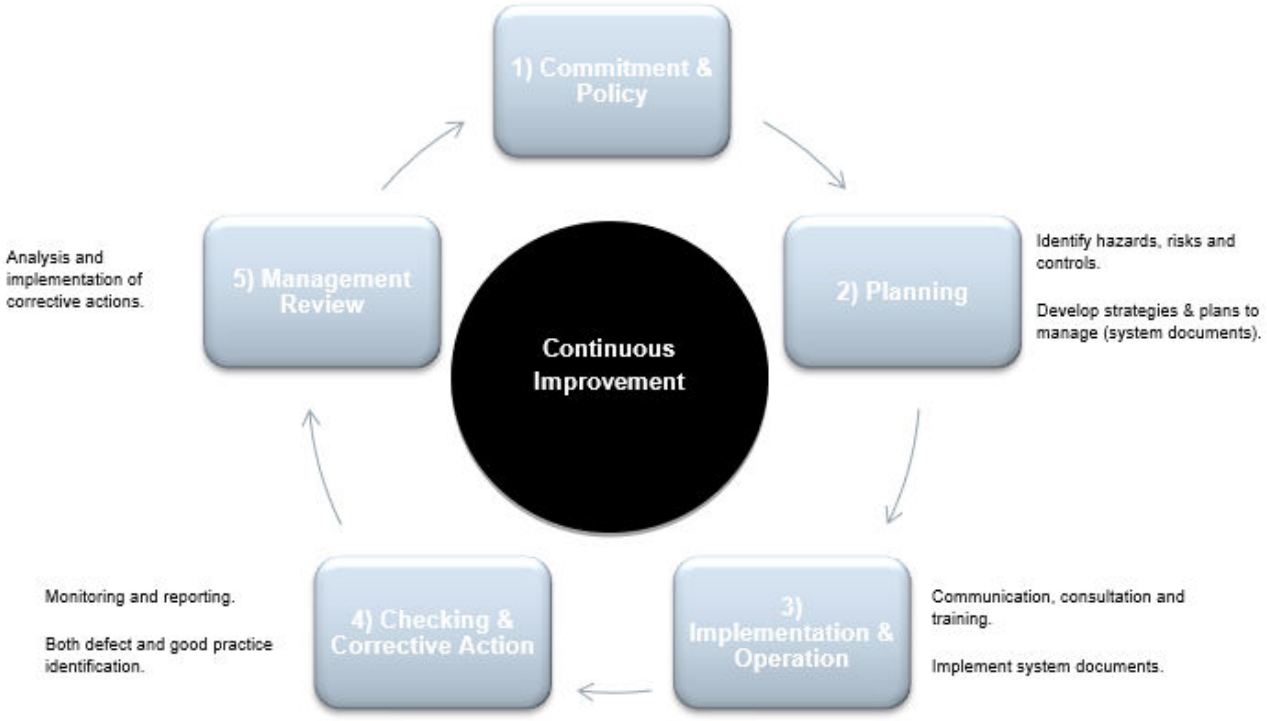

Figure 3 Continuous Improvement Model

8 Implementation and Reporting

8.1 General Requirements

This section of the management plan describes the key elements of implementation and reporting specific to the management of public safety.

A description of requirements and procedures that are applicable to the extraction of LW S1A-S7A in general are provided in the Extraction Plan Main Document. This detail includes:

- Environmental Management System Framework;
- General reporting requirements, including details regarding the Annual Review, and Annual Return;
- Incident management and reporting requirements;
- Non-compliance management and reporting requirements;
- Exceedances management and reporting requirements;
- Compliant and dispute management protocol;
- Audit and review requirements for general environmental performance, including internal audits and reviews, and independent environmental audits;
- General roles and responsibilities;
- Employee and contractor training requirements;
- Response groups to facilitate the review of monitoring data;
- Internal and External Stakeholder Communication Procedures;
- Access to information requirements, including Tahmoor Coal website and the Tahmoor Colliery Community Consultative Committee;
- Document control protocol; and
- Risk assessment for built and natural features and corresponding outcomes.

8.2 Reporting Requirements

8.2.1 Performance Measure Exceedance

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.

8.2.2 Specific Reporting for Public Safety

There are no specific reporting requirements to the management of public safety identified for the extraction of LW S1A-S7A, unless a TARP is triggered and a notification report is requiredReview and Auditing

8.2.3 Plan Audit

Audits of the ***Public Safety Management 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 ***Public Safety Management 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 ***Public Safety Management Plan***, they may also involve discussions with personnel involved in the management plan to determine understanding and compliance.

Should an audit of this ***Public Safety Management Plan*** determine that a deficiency is evident in the content or implementation, a corrective action must be developed and implemented. Actions will be assigned to a nominated individual and tracked in Cority.

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 ***Public Safety Management Plan*** are to be managed and communicated to all personnel in line with the Change Management Process.

8.2.4 Plan Review

This ***Public Safety Management Plan*** will be reviewed:

Event 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 ***Public Safety Management Plan*** 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; or

Time based: in the absence of regular event-based reviews and 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;

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).

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

8.3 Roles and Responsibilities

Specific information pertaining to the role, responsibility, authority and accountability of key personnel involved in implementation of the Public Safety Management Plan for the extraction of LW S1A to LW S7A at Tahmoor Coal is provided in **Table 8** below.

Table 8 Reference Information

Role	Responsibilities for this document
Operations Manager	Provide adequate personnel/resources for implementation of this plan and associated plans.
Environment & Community Manager	Facilitate a process of managing overall compliance with regulatory requirements and undertake external reporting for legislative non-compliances as required. Determine adequate resources and funds are available to ensure the effectiveness of this procedure; and certify compliance and adherence to this plan. Develop, implement and maintain this plan. Liaise with relevant government authorities in relation to regulatory conditions and compliance issue.
All Managers	Activities under their control are to be undertaken in accordance with this plan and associated management plans and procedures. Manage public safety controls within their jurisdiction are operated and maintained in a proper and efficient manner. Report all public safety incidents and complaints in a timely manner.
All Coordinators	Activities under their control are to be undertaken in accordance with this plan and associated management plans and procedures. Manage controls within their jurisdiction are operated and maintained in a proper and efficient manner. Report all safety incidents and complaints in a timely manner.
All Persons	Activities under their control are to be undertaken in accordance with this plan and associated management plans and site procedures. Manage safety controls within their jurisdiction are operated and maintained in a proper and efficient manner. Report all safety incidents and complaints in a timely manner.

9 Document Information

9.1 Referenced Documents

Reference information, listed in **9** below, is information that is directly related to the development of this document or referenced from within this document.

Table 9 Reference Information

Title
Department of Planning and Environment (DPE) (2022), Extraction Plan Guideline.
Department of Planning and Environment (2017), Resources Regulator, Mine Safety Operations.
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.
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.

9.2 Related Documents

Related documents, listed in **10** below, are internal documents directly related to or referenced from this document.

Table 10 Related Documents

Number	Title
TAH-HSEC-00124	Document and Record Control
TAH-HSEC-00365	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

9.3 Glossary of Terms

Section 8.3 of the Extraction Plan Main Document provides a compiles Glossary of Terms.

9.4 Abbreviations

Abbreviations used in this document are provided below in **Table 11.**

Table11 Abbreviations

Abbreviation	Definition
CCL	Consolidated Coal Lease
CHPP	Coal handling and preparation plant
Commonwealth DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water Formerly known as Commonwealth Department of Agriculture, Water and the Environment (DAWE)
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 Now known as NSW Department of Planning, Housing and Infrastructure (DPHI)
DPHI	NSW Department of Planning, Housing and Infrastructure Formerly known as NSW Department of Planning and Environment (DPE)
EIS	Environmental Impact Statement
km	Kilometre/s
LW	Longwall
LW S1A-S7A	Longwall South 1A – South 7A
LGA	Local Government Area
m	Metre/s
mm	Millimetre/s
ML	Mining Lease
MSEC	Mine Subsidence Engineering Consultants
NSW	New South Wales
PCBU	Persons conducting a business or undertaking
PCP	Principal Control Plans
PHMP	Principal Hazard Management Plan
PMH	Principal Mining Hazards
PMI	Pre Mining Inspection
PSMP	Public Safety Management Plan
Resources Regulator	Department of Regional NSW - Resources Regulator
SRG	Structural Response Group
SMP	Subsidence Management Plan
SMS	Safety Management System
SSD 8445	Tahmoor South Project Development Consent (the Consent)
Study Area	Study Area applicable to this management plan consists of a combination of the predicted 20 millimetre (mm) Total Subsidence Contour and the 35° Angle of Draw Line as shown in **Figure 2.**

Abbreviation	Definition
SMP Application	Subsidence Management Plan Application for Longwalls 31 to 37 in the Bulli Coal Seam in December 2014
Tahmoor Mine	Tahmoor Coal Mine
Tahmoor Coal	Tahmoor Coal Pty Ltd
TARP	Trigger Action Response Plan
WHS Laws	*Work Health and Safety Act 2011* and the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and associated regulations.

9.5 Change Information

Full details of the document history are recorded below in **Table 12**.

Table 12 Document History

Version	Date Reviewed	Reviewed By	Change Summary
1.0	12 May 2022	Charlie Wheatley, Zina Ainsworth, Malcolm Waterfall, Peter Vale	New Document
1.1	12 May 2022	Charlie Wheatley, Zina Ainsworth, Malcolm Waterfall, Peter Vale	Minor formatting changes.
2.0	9 September 2022	Charlie Wheatley, Zina Ainsworth	Updated document following consultation with DPE (now DPHI), government agencies and the Independent Advisory Panel for Underground Mining
3.0	18 January 2023	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	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	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	Nick Le Baut, Zina Ainsworth	Review following the approval of Amendment 2 (LW S4A Shortening) to the Tahmoor South LWS1A-S6A Extraction plan (11 November 2024).
7.0	October 2025	Nick Le Baut, Zina Ainsworth, Ross Barber	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).

APPENDIX A – LW S1A-LW S6A Risk Assessment

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Longwalls South 1A to 6A

	Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment	Step 3: Identify the risks, causes and potential consequences	Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk	Step 10: PMC	Step 11: Treat the Risks

☑ Appendix B

Site	Type of Risk Assessment	Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens.....	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
Tahmoor Underground	Major Project	Approvals	Extraction Plan	Extraction Plan Approval not received and delay in LW start	Approval not achieved in time, delay to LW production	* Poor planning and management * DPIE delay in assessing application * Deliberation from IAPUM / DPIE	* Extraction Plan for previous longwalls (LW W1-W2, LW W3-W4) approved and to be referenced as example (AC) * Approvals Specialist managing schedule and scope of works (AC) * Weekly Approvals Planning meeting to review schedule and tracking to meet timeframe (AC) * Consultation strategy implemented for Government Agencies (AC) * All specialist consultants engaged (AC) * Weekly GM reporting (AC) * 6 longwall blocks to be submitted for extraction plan approval (AC)	3	Financial	3	C	13	3	Financial				
Tahmoor Underground	Major Project	Approvals	Extraction Plan	Adequate baseline data not available	Approval not achieved in time, delay to LW production	Inadequate baseline data	* Sufficient baseline data gathered as part of Tahmoor South EIS and amendment reports, currently being managed by Approvals Specialist (AC) * Consultation strategy implemented for Government Agencies (AC) * Indepth study into water monitoring programs and implementation of programs (AC)	3	Financial	1	C	4	1	Financial				
Tahmoor Underground	Major Project	Approvals	Extraction Plan	DPIE requires changes to mine layout	Approval not achieved in time, delay to LW production	Concerns regarding impacts to environment and built structures	* Consultation strategy implemented for Government Agencies (AC) * Implementation of CMAP and proven remediation success and dedicated Environmental Projects Coordinator (AC) * Design of Mine Plan layout conducted in consultation with Subsidence and Geotechnical Consultants to minimise impacts to creeks (EC)	3	Financial	1	C	4	1	Financial				
Tahmoor Underground	Major Project	Approvals	Extraction Plan	DPIE does not accept proposed management actions as outlined in TARPs for impacts to creeks / other environmental areas	Approval not achieved in time, delay to LW production	DPIE Policy position on mining impacts to creeks / other environmental areas	* Prior consultation with DPIE Heritage NSW and other Government Agencies (AC) * Implementation of CMAP and dedicated Environmental Projects Coordinator (AC) * Design of Mine Plan layout conducted in consultation with Subsidence and Geotechnical Consultants to minimise impacts to creeks (EC)	2	Legal & Compliance	1	C	4	2	Legal & Compliance	Update build structures management plan to include commitments regarding compensation to land owners.	Darryl Kay / Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Approvals	Extraction Plan	DPIE requests the preparation of an additional Management Plan	Approval not achieved in time, delay to LW production	DPIE Policy position on mining impacts to creeks / other environmental areas	* Prior consultation with DPIE (AC) * Implementation of CMAP and dedicated Environmental Projects Coordinator (AC) * Design of Mine Plan layout conducted in consultation with Subsidence and Geotechnical Consultants to minimise impacts to creeks (EC)	3	Legal & Compliance	1	C	4	1	Legal & Compliance				
Tahmoor Underground	Major Project	Approvals	Extraction Plan	Longwall West 4 completed earlier than scheduled	Approval not achieved in time, delay to LW production	LW W4 block shortened	* Regular tracking of LW W4 schedule to meet extraction plan submission (AC) * Target date for start of LW S1A known (AC) * Extraction plan approval process developed in accordance with LW W4 schedule (AC) * Weekly Approvals Planning meeting to review schedule and tracking to meet timeframe (AC) * Technical Services provide monthly forecast to Senior Management Team for tracking and review (AC)	3	Financial	3	D	9	3	Financial				Longwall commencement start may be constrained by development.
Tahmoor Underground	Major Project	Approvals	Built Features	PSMP approval from infrastructure owners / landowners not received before mining impacts	Resources Regulator, Provides us with, Constraints, Prohibition Notice, delay in LW production	* Inadequate consultation with infrastructure owners / landowners prior to submitting documentation * Delay in approval from infrastructure owners / landowners	* Existing plan completed and approved for other similar features, which includes consultants advice (AC) * Pre Mining Inspection / Hazard identification / Front of House Inspections completed prior to mining impacts (EC) * Consultation Process with infrastructure owners / landowners (AC) * Identification of additional resources requried eg engagement of additional consultants (AC)	3	Financial	3	D	9	3	Legal & Compliance				
Tahmoor Underground	Major Project	Subsidence Monitoring	Subsidence	Potential for greater than predicted subsidence over LW S1A-S6A	Greater than predicted impacts to surface and subsurface features, potential exceedance of approved level of impact	Geological movements due to subsidence	* Approvals Specialist managing report delivery to schedule (AC) * Weekly Approvals Planning meeting to review schedule and tracking to meet timeframe (AC) * Learnings from mining previous Longwalls LW 1 - 2 and 14 - 19 adjacent to these panels (AC) * Existing subsidence monitoring (EC) * Impact assessments takes into account potential for actual subsidence greater than predicted (AC)	3	Legal & Compliance	1	D	2	1	Legal & Compliance				
Tahmoor Underground	Major Project	Subsidence Monitoring	Subsidence	Failure to implement management plan actions	Fines and prosecution	Poor planning and management	* Weekly subsidence meetings attended by Environmental and Community Team members and External Consultants (AC) * Subsidence Monitoring reports (EC) * Monthly Environmental Response Group Meeting attended by Environment and Community Team members and External Consultants (AC)	3	Legal & Compliance	1	C	4	1	Legal & Compliance				

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Longwalls South 1A to 6A

	Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment	Step 3: Identify the risks, causes and potential consequences	Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk	Step 10: PMC	Step 11: Treat the Risks

☑ Appendix B

Site	Type of Risk Assessment	Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens.....	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
Tahmoor Underground	Major Project	Community Engagement	Land Owners	Stress to land owner/business owner from LW S1A-S6A	Health and Safety	* Impacts to business * Inconvenience to business * Concerns about mining * Previous relationships * Poor engagement * Mental health	* Free confidential counselling services available to all stakeholders (AC) * Develop Infrastructure Management Plan for selected properties in area and implementation (AC) * Stakeholder Engagement Plan (education of subsidence) (AC) * Information packs (AC) * Pre Mining Inspections and Hazard Inspections offered to all land owners (AC) * Monthly newsletter to all residents including email contact for community (AC) * SA NSW guidelines (AC) * 24 hour emergency contact line for community (AC) * Prepared LW S1A-S6A Resident Information Pack and distributed (AC) * T4C - Tahmoor Colliery Community Consultation meetings (AC) * Door knocking face to face Community Consultation (AC)	3	Health & Safety	2	B	12	3	Health & Safety				
Tahmoor Underground	Major Project	Community Engagement	Land Owners	Community Action Group Forms	Community Reputation	* Impacts and inconvenience to business/property owners. * Concerns about mining * Previous relationships * Poor engagement * Mental health	* Free confidential counselling services available to all stakeholders (AC) * Develop Infrastructure Management Plan for selected properties in area and implementation (AC) * Stakeholder Engagement Plan (education of subsidence) (AC) * Information packs (AC) * Pre Mining Inspections and Hazard Inspections offered to all land owners (AC) * Monthly newsletter to all residents including email contact for community (AC) * SA NSW guidelines (AC) * 24 hour emergency contact line for community (AC) * Prepared LW S1A-S6A Resident Information Pack and distributed (AC) * T4C - Tahmoor Colliery Community Consultation meetings (AC) * Door knocking face to face Community Consultation (AC)	3	Community / Reputation	2	C	8	2	Community / Reputation				
Tahmoor Underground	Major Project	Community Engagement	Land Owners	Land Owners will not sign Land Access Licence to meet monitoring requirements	Limited ability to establish baseline and monitor	* Land owner not agreeing with access agreement conditions * Poor management and consultation.	* Consultation with Landowner regarding monitoring and mining process ongoing (AC) * Previous history of stakeholder engagement plans and land access established procedures (AC) * A clear defined process for pre-mining inspections (AC) * Front of house pre mining inspections (EC) * Details list of ownership in area (AC) * Draft monitoring plan issued for discussion (AC)	3	Legal & Compliance	1	C	4	1	Legal & Compliance				
Tahmoor Underground	Major Project	Community Engagement	Rural residences	Damage to infrastructure or buildings	Health and Safety	Subsidence	* Built Structures Management Plan (AC) * Infrastructure Management Plans (AC) * Previous history of managing properties and infrastructure (AC) * Consultation and engagement with residents (AC) * Weekly subsidence meetings attended by Environmental and Community Team members and External Consultants (AC) * Survey monitoring (EC) * Subsidence Monitoring reports (EC) * Pre Mining Inspections and Hazard Inspections offered to all land owners (AC) * Front of house pre mining inspections (EC) * Weekly visual inspections conducted by building inspector (AC) * Draft monitoring plan issued for discussion (AC)	3	Health & Safety	2	C	8	3	Health & Safety				
Tahmoor Underground	Major Project	Built Infrastructure	Main Southern Railway Infrastructure	Resources Regulator does not accept proposed Management Strategy regarding rail embankments / culverts and other infrastructure	Financal Impact	* RR conservative interpretation of Engineering Reports. * Poor Project Management * Inadequate consultation.	* Learnings from previous mining beneath Main Southern Railway and Picton Mittagong Loop Line (AC) * Consultation with RR and key stakeholders (AC) * Regular Meetings with ARTC Rail Management Group (AC) * Project Schedule (AC) * Completed separate risk assessment for rail infrastructure (AC) * ARTC Tahmoor South Governance Arrangements (AC) * Previously prepared Management Plan for Main Railway Infrastructure (AC)	2	Financial	2	D	5	2	Financial	Engineering Review of Embankments, Culverts, and other key infrastructure.	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project														Finalise rail management plan and implement.	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Endeavour Energy Infrastructure	Adverse impacts to power poles	Reduction in clearance heights and / or excessive tilting of power poles	Subsidence	* Successful completion of management plan for LW 22-W4 (AC) * Previous ground survey, pole survey and visual inspection as part of LW 22 - W4 management (AC) * Previous consultation, coordination and cooperation with Endeavour Energy (AC)	2	Health & Safety	2	D	5	2	Health & Safety	Complete and implement Endeavour Energy Management Plan including TARP	Ross Barber	01-Jul-22	

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Longwalls South 1A to 6A

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☑ Appendix B

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Tahmoor Underground	Major Project														Endeavour Energy to complete Critical Poles Audit	Amanda Fitzgerald	01-Jul-22	
Tahmoor Underground	Major Project														Engage consultant to complete survey of critical poles	Amanda Fitzgerald	01-Jul-22	
Tahmoor Underground	Major Project														Building Inspection Services to complete baseline tilt measurement of poles	Amanda Fitzgerald	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Endeavour Energy Infrastructure	Adverse impacts to consumer cables to houses	Loss of serviceability, emergency repair of powerline	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey, pole survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Endeavour Energy (AC)	2	Property Damage	2	D	5	2	Property Damage	Complete Endeavour Energy Management Plan including TARP	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Sydney Water Potable Water Infrastructure	Leakage of the joints	Reduced water supply requiring emergency repair or replacement of pipework	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Sydney Water (AC)	2	Property Damage	2	D	5	2	Property Damage	Complete Sydney Water Potable Water Management Plan including TARP	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Sydney Water Sewer Infrastructure	Leakage of sewage	Leakage of sewage requiring repair or replacement	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Sydney Water (AC) * Sydney Water design reduces potential for damage (EC)	2	Property Damage	1	D	2	1	Property Damage	Complete Sydney Water Sewerage Management Plan including TARP	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Jemena gas infrastructure	Damage to gas infrastructure	Gas leak, emergency repair	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Jemena (AC) * Design of gas line flexible pipework (EC) * Gas is odourous - community more likely to report gas leaks if they occur (EC) * Pipeline Engineering Consultant engaged (AC)	2	Health & Safety	2	D	5	2	Health & Safety	Complete Jemena Management Plan including TARP and contact details for Jemena	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project														Complete modelling impacts of subsidence on pipeline and generate report by consultant.	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project														Complete baseline gas detection survey	Amanda Fitzgerald	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Telstra / NBN infrastructure	Damage to copper local cable	Loss of serviceability, emergency repair or replacement of cable	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Telstra and NBN Co (AC)	2	Property Damage	1	D	2	1	Property Damage	Complete Telstra Management Plan including TARP	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project														Complete NBN Management Plan including TARP	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Telstra / NBN infrastructure	Damage to conduit, manhole, pit and pole network	Loss of serviceability, emergency repair or replacement of cable	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Telstra and NBN Co (AC)	2	Property Damage	1	D	2	1	Property Damage	Complete Telstra Management Plan including TARP	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project														Complete NBN Management Plan including TARP	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Telstra / NBN infrastructure	Damage to optical fibre cables	Loss of serviceability, emergency repair or replacement of cable	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Telstra and NBN Co (AC)	2	Property Damage	3	D	9	3	Property Damage	Complete Telstra Management Plan including TARP	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project														Complete NBN Management Plan including TARP	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Council Infrastructure	Minor cracking or heaving of pavement, kerbs and gutters	Slight damage to road, requiring repair. Reduced maintenance life	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Wollondilly Shire Council (AC)	2	Property Damage	2	B	12	2	Property Damage	Complete Wollondilly Shire Council Management Plan including TARP	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Council Infrastructure	Major cracking or heaving of pavement, kerbs and gutters	Extensive damage to road, requiring emergency repair and extension rehabilitation	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Wollondilly Shire Council (AC)	2	Property Damage	3	E	6	3	Property Damage	Complete Wollondilly Shire Council Management Plan including TARP	Ross Barber	01-Jul-22	

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Longwalls South 1A to 6A

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☑ Appendix B

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Tahmoor Underground	Major Project	Built Infrastructure	Council Infrastructure	Damage to culverts and stormwater infrastructure	Reduced maintenance life; sealing / localised repair or loss of serviceability requiring emergency repair and/or replacement of culverts	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with Wollondilly Shire Council (AC)	2	Property Damage	2	D	5	2	Property Damage	Complete Wollondilly Shire Council Management Plan including TARP	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Picton Weir	Damage to weir	Reduced water storage requiring emergency repair	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW W1-W4 management (AC) * Previous consultation, coordination and cooperation with Wollondilly Shire Council (AC)	2	Property Damage	3	D	9	3	Property Damage	Complete Picton Weir Management Plan including TARP	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Survey Control Marks	Movement of survey control marks	Errors in measurements	Subsidence	* Preparation of previous POSI applications of predicted subsidence movements of the permanent survey control marks (AC)	2	Property Damage	1	A	11	1	Property Damage	Notify Spatial Services via POSI application of predicted subsidence movements of the permanent survey control marks	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Survey Control Marks	Use of survey control marks by general surveyors during and after mining, affecting results (prior to re-calibration)	Errors in measurements	Subsidence	* POSI application of predicted subsidence movements of the permanent survey control marks completed for LW 32 - W4 (AC) * Ongoing monitoring and review of far field monitoring network, including GNSS network (EC)	2	Property Damage	1	A	11	1	Property Damage	Complete POSI application for LW S1A-S6A	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Built Structures	Impact on health and safety of people	Injury to person	Subsidence resulting in failure of a structural element	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with residents (AC) * Completion of Pre-mining and subsidence hazard inspections (EC)	2	Health & Safety	3	E	6	3	Health & Safety	Complete Built Structures Management Plan including TARP	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Built Structures	Damage to structures	Repair of structures	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with residents (AC) * Completion of Pre-mining and subsidence hazard inspections (EC)	2	Property Damage	3	D	9	3	Property Damage	Complete Built Structures Management Plan including TARP for emergency evacuation procedures	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Pools	Impact on health and safety of people	Injury to person / single fatality	Subsidence causing damage to pool gate or fence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with residents (AC) * Completion of Pre-mining and subsidence hazard inspections (EC) * SANSW Claims Process (AC)	2	Health & Safety	4	E	10	4	Health & Safety	Complete Built Structures Management Plan including TARP for emergency evacuation procedures	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Pools	Damage to pools	Repair of pools or plant	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with residents (AC) * Completion of Pre-mining and subsidence hazard inspections (EC)	2	Property Damage	2	C	8	2	Property Damage	Complete Built Structures Management Plan including TARP for emergency evacuation procedures	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Septic tanks	Damage to septic tanks	Repair of tanks	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with residents (AC) * Completion of Pre-mining and subsidence hazard inspections (EC)	2	Property Damage	1	D	2	1	Property Damage	Complete Built Structures Management Plan including TARP for emergency evacuation procedures	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Private groundwater bores	Impacts to groundwater bore / pumps	Repair of bore / pump	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous private bore census and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with residents (AC) * Make good procedure (AC)	2	Property Damage	2	C	8	2	Property Damage	Complete Baseline Private Bore Census	Tom O'Brien	01-Mar-22	
Tahmoor Underground	Major Project	Built Infrastructure	Wirrimbirra	Damage to Wirrimbirra structures and items	Damage to Wirrimbirra structures, potential impacts to heritage significance of property	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC) * Structural assessment of structures completed (EC)	2	Property Damage	2	C	8	2	Property Damage	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Bargo Cemetery	Damage to items at the Bargo Cemetery	Potential impacts to heritage significance of property	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	1	D	2	1	Property Damage	Complete specific Management Plan including TARP	Ross Barber	01-Jul-24	
Tahmoor Underground	Major Project	Built Infrastructure	Wollondilly Anglican College	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	3	C	13	3	Property Damage	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Longwalls South 1A to 6A

	Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment	Step 3: Identify the risks, causes and potential consequences	Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk	Step 10: PMC	Step 11: Treat the Risks

☑ Appendix B

Site	Type of Risk Assessment	Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens.....	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
Tahmoor Underground	Major Project							2	Health & Safety	2	C	8	2	Health & Safety	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Tahmoor Coal Site	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	3	C	13	3	Property Damage	Complete specific Management Plan including TARP	Ross Barber	01-Jul-22	Site subsidence committee formed for Tahmoor Colliery and a separate site risk assessment will be conducted.
Tahmoor Underground	Major Project				Health and Safety			2	Health & Safety	2	D	5	2	Health & Safety	Complete specific Management Plan including TARP	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Inghams	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	2	E	3	2	Property Damage	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project				Health and Safety			2	Health & Safety	1	D	2	1	Health & Safety	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Hydroponics Nursery	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	1	E	1	1	Property Damage	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-24	
Tahmoor Underground	Major Project							2	Health & Safety	1	D	2	1	Health & Safety	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-24	
Tahmoor Underground	Major Project	Built Infrastructure	Petrol Station - Mechanics	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	3	D	9	3	Property Damage	Complete specific Management Plan for Petrol Station and Mechanics Store including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project														Tank assessment to be conducted	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project							2	Health & Safety	2	D	5	2	Health & Safety	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Tahmoor Garden Centre	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	1	E	1	1	Property Damage	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project							2	Health & Safety	2	E	3	2	Health & Safety	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Concrete business	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	3	D	9	3	Property Damage	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project							2	Health & Safety	2	E	3	2	Health & Safety	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-22	
Tahmoor Underground	Major Project	Built Infrastructure	Canine Country Club	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	1	D	2	1	Property Damage	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-24	
Tahmoor Underground	Major Project							2	Health & Safety	2	E	3	2	Health & Safety	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-24	
Tahmoor Underground	Major Project	Built Infrastructure	Kalinya Estate	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	3	E	6	3	Property Damage	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-24	
Tahmoor Underground	Major Project							2	Health & Safety	2	E	3	2	Health & Safety	Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-24	
Tahmoor Underground	Major Project	Built Infrastructure	Wellers Road Overbridge	Damage to strcutures	Damage to Structure	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	3	D	9	3	Property Damage	Complete specific Management Plan including TARP	Ross Barber	01-Jul-24	
Tahmoor Underground	Major Project	Surface Water	Pool water level and streamflow	Fracturing of creek beds and/or water table drawdown	Reduction in pool holding capacity, water level, connective streamflow; Changes in natural drainage behaviour; Reduction in channel bank stability	Subsidence	* Mine design (EC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Implementation of CMAP and proven remediation success and dedicated Environmental Projects Coordinator (AC)	2	Environment	4	B	21	4	Environment	Complete Water Management Plan	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Installation of water level and streamflow monitoring sites required for first 3 longwalls	Natalie Brumby	01-Mar-22	
Tahmoor Underground	Major Project														Installation of water level monitoring site required for second 3 longwalls	Natalie Brumby	01-Mar-24	

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Longwalls South 1A to 6A

	Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment	Step 3: Identify the risks, causes and potential consequences	Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk	Step 10: PMC	Step 11: Treat the Risks

☑ Appendix B

Site	Type of Risk Assessment	Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens.....	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
Tahmoor Underground	Major Project														Completion of updated baseline geomorphology survey and set up of annual catchment survey	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Surface Water	Water quality	Fracturing of creek beds, gas emissions occur	Decrease in water quality in creeks (pH, EC, heavy metals)	Subsidence	* Mine design (EC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Implementation of CMAP and proven remediation success and dedicated Environmental Projects Coordinator (AC)	2	Environment	4	B	21	4	Environment	Complete Water Management Plan	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Installation of water quality monitoring sites required for first 3 longwalls	Natalie Brumby	01-Mar-22	
Tahmoor Underground	Major Project														Installation of water quality monitoring site required for second 3 longwalls	Natalie Brumby	01-Mar-24	
Tahmoor Underground	Environmental	Surface Water	Overland Flow	Alteration of topography, vertical subsidence	Change in catchment run off characteristics and increase in localised ponding	Subsidence	* Mine design (EC) * Management Plans prepared for previous longwalls (AC)	2	Environment	2	D	5	2	Environment	Complete Water Management Plan	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Surface Water	Dams	Change in catchment run off characteristics	Localised ponding, reduction in water level in dams	Subsidence	* Mine design (EC) * Management Plans prepared for previous longwalls (AC)	2	Property damage	2	D	5	2	Property Damage	Complete Water Management Plan	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Surface Water/Landscape Features	Channel and Bank Stability Erosion and Increased Sedimentation Run off	Reduction in Channel and Bank Stability	Increased erosion and sedimentation	Subsidence	* Mine design (EC) * Management Plans prepared for previous longwalls (AC)	2	Environment	2	C	8	2	Environment	Complete Water Management Plan	April Hudson	01-Mar-22	
Tahmoor Underground	Environmental	Groundwater	Groundwater level	Fracturing of geological strata	* Adverse effects to private bores * Repair of bore / pumps	Subsidence	* Make good procedure (AC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Previous private bore census and visual inspection as part of LW 22-W4 management (AC)	2	Environment	3	C	13	4	Environment	Complete Groundwater Technical Report, and incorporate monitoring measures and TARP into Water Management Plan	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Completion of Groundwater model update	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Replace required loggers for Tahmoor South deep piezometer monitoring	Tom O'Brien	06-Jan-22	
Tahmoor Underground	Major Project														Complete installation of shallow groundwater bores required for the first 3 longwalls	Tom O'Brien	01-Mar-22	
Tahmoor Underground	Major Project														Complete installation of shallow groundwater bores required for the second 3 longwalls	Tom O'Brien	01-Mar-24	
Tahmoor Underground	Major Project														Complete installation of Height of Fracturing Borehole (pre-mining) for LW S1A	Tom O'Brien	01-Mar-22	
Tahmoor Underground	Major Project														Commence ongoing private bore monitoring activities	Tom O'Brien	06-Jan-22	
Tahmoor Underground	Major Project							2	Property Damage	3	C	13	3	Property Damage	Bore census to be conducted	Tom O'Brien	01-Mar-22	
Tahmoor Underground	Major Project	Groundwater	Groundwater level	Groundwater drawdown causing loss of yield	Increased pumping costs. Reduced access to water.	Depressurisation	* Make good procedure (AC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Previous private bore census and visual inspection as part of LW 22-W4 management (AC)	2	Community / Reputation	3	C	13	4	Environment	Complete Groundwater Technical Report, and incorporate monitoring measures and TARP into Water Management Plan	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Completion of Groundwater model update	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Bore census to be conducted.	Tom O'Brien	01-Mar-22	

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Longwalls South 1A to 6A

	Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment	Step 3: Identify the risks, causes and potential consequences	Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk	Step 10: PMC	Step 11: Treat the Risks

☑ Appendix B

Site	Type of Risk Assessment	Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens.....	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
Tahmoor Underground	Major Project														Commence ongoing private bore monitoring activities	Tom O'Brien	06-Jan-22	
Tahmoor Underground	Environmental	Groundwater	Water quality	Adverse impact to groundwater aquifers	Adverse effects to private bores	Subsidence	* Make good procedure (AC) * Pre existing bore water census (EC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC)	2	Environment	4	C	18	4	Property Damage	Complete Groundwater Technical Report, and incorporate monitoring measures and TARP into Water Management Plan	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Complete Baseline Private Bore Census, and incorporate into Water Management Plan	Tom O'Brien	01-Mar-22	
Tahmoor Underground	Major Project														Complete installation of shallow groundwater bores required for the first 3 longwalls	Tom O'Brien	01-Mar-22	
Tahmoor Underground	Major Project														Complete installation of shallow groundwater bores required for the second 3 longwalls	Tom O'Brien	01-Mar-24	
Tahmoor Underground	Major Project	Groundwater	ThirImere Lakes	Loss of water	Impacts to surface water / ground water conectivity and lake water levels	Depressurisation	* Mine design (EC) * Existing monitoring program by NSW Government (AC) * Review of analysis by TLRP (AC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC)	2	Environment	4	D	14	4	Environment	Water Management Plan to be completed, including development of TARPs.	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Install groundwater bores for monitoring of ThirImere lakes for the second 3 longwalls.	Tom O'Brien	01-Mar-24	
Tahmoor Underground	Major Project							2	Community / Reputation	4	D	14	4	Community / Reputation	Water Management Plan to be completed, including development of TARPs.	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Install groundwater bores for monitoring of ThirImere lakes for the second 3 longwalls.	Tom O'Brien	01-Mar-24	
Tahmoor Underground	Environmental	Landscape features	Steep slopes	Tension cracks, compression ridges, soil slump / failure	Serviceability of roadway / impacts to traffic	Subsidence	* Geotechnical Engineer assessment and report where the slopes are near road embarkments within the study area (PMI) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Previous consultation, coordination and cooperation with landowners / residents (AC) * Visual inspections during mining (AC)	2	Property Damage	2	D	5	3	Property Damage	Complete Land Management Plan for landscape features (including steep slopes and road embankments), including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Complete detailed slope stability assessment, and incorporate into Land Management Plan	April Hudson	01-Apr-22	
Tahmoor Underground	Major Project							2	Health & Safety	3	D	9	3	Health & Safety	Complete Public Safety Management plan to incorporate signage and communication regarding subsidence.	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Landscape features	Cliffs	Rock fall/cliff regression	Personnel injury	Subsidence	* Mine Plan (EC) * Geotechnical Engineer assessment and report where the clifs are near road embarkments within the study area (PMI) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Visual inspections during mining (AC)	2	Health & Safety	3	C	13	3	Health & Safety	Complete Land Management Plan for landscape features (including cliffs), including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Landscape features	Farm dams	Damage to farm dams	Leak of dam water / dam failure, cascading dam failure	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with residents (AC)	2	Property Damage	2	D	5	2	Property Damage	Complete Land Management Plan for landscape features (including farm dams), including TARP	April Hudson	01-Mar-22	

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Longwalls South 1A to 6A

	Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment	Step 3: Identify the risks, causes and potential consequences	Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk	Step 10: PMC	Step 11: Treat the Risks

☑ Appendix B

Site	Type of Risk Assessment	Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens.....	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
Tahmoor Underground	Major Project	Landscape features	Farm dams	Damage to farm dams	Personnel injury	Subsidence	* Management Plans prepared for previous longwalls (AC) * Previous ground survey and visual inspection as part of LW 22-W4 management (AC) * Previous consultation, coordination and cooperation with residents	2	Health & Safety	3	E	6	3	Health & Safety	Complete Land Management Plan for landscape features (including farm dams), including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Environmental	Aquatic ecology	Aquatic habitat / Macroinvertebrates / fish	Fracturing of creek beds	Reduction in pool connectivity / holding capacity / flow, change in water quality resulting in change in-stream vegetation and aquatic habitat.	Subsidence	* Mine design (EC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Biodiversity monitoring being undertaken (AC)	2	Environment	4	B	21	5	Environment	Complete Biodiversity Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Environmental	Aquatic ecology	Threatened aquatic species and habitat	Fracturing of creek beds and/or water table drawdown	Reduction in pool holding capacity / flow resulting in decreased in threatened aquatic species	Subsidence	No known threatened aquatic species and habitat.	3	Environment	1	E	1	1	Environment				
Tahmoor Underground	Environmental	Terrestrial ecology	Riparian vegetation	Fracturing of creek beds, emissions of gas	Riparian vegetation die-back, tree fall	Subsidence	* Mine design (EC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Riparian monitoring program being underaken (AC)	2	Environment	1	E	1	1	Environment	Complete Biodiversity Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Environmental	Terrestrial ecology	Threatened ecological communities	Fracturing of creek beds, emissions of gas	Riparian vegetation die-back, tree fall	Subsidence	* Mine design (EC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Riparian monitoring program being underaken (AC)	2	Environment	1	E	1	1	Environment	Complete Biodiversity Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Terrestrial ecology	Threatened Amphibians	Decline in pool holding capacity	Impacts to amphibian habitat	Subsidence	No known threatened Amphibians	3	Environment	1	E	1	1	Environment				
Tahmoor Underground	Environmental	Terrestrial ecology	Groundwater dependent ecosystems	Fracturing of creek beds and/or water table drawdown	Reduction of groundwater level resulting in impact to groundwater dependent ecosystems	Subsidence	* No known High Priority Groundwater Dependent Ecosystems above or adjacent to Tahmoor South longwalls. * Areas of likely groundwater dependence mapped by NSW Government.	3	Environment	1	E	1	1	Environment	Install groundwater bores for monitoring of Thirlmere lakes for the second 3 longwalls.	Tom O'Brien	01-Mar-24	
Tahmoor Underground	Major Project														Targetted mapping exercise of springs to be completed.	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Terrestrial ecology	Threatened Flora	Fracturing of creek beds, emissions of gas	Dieback of threatened flora populations (Pomederris Brunnea) along tee tree hollow creek	Subsidence	* Mine design (EC) * Management Plans prepared for previous longwalls (AC) * Previous monitoring completed for previous longwalls (AC) * Reparian monitoring program being underaken (AC)	2	Health & Safety	1	E	1	1	Environment	Complete Biodiversity Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Aboriginal heritage	Shelter with art and/or deposit	Fracturing of shelter structure	Loss of heritage values	Subsidence	* Visual inspections conducted (AC) * Management Plans for previous Longwall W1 - W4 (AC)	2	Environment	4	D	14	5	Environment	Complete Heritage Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project							2	Community / Reputation	4	D	14	4	Community / Reputation	Complete archival photogramatory	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Aboriginal heritage	Surface scatters / isolated find	Disturbance of scatters	Loss of heritage values	Subsidence	* Visual inspections conducted (AC) * Management Plans for previous Longwall W1 - W4 (AC)	2	Environment	1	E	1	1	Environment	Complete Heritage Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Environmental	Historical heritage	Heritage item (Bargo Cemetery)	Impacts to site	Loss of heritage value	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	1	D	2	1	Property Damage	Complete Heritage Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Complete specific Management Plan including TARP	Ross Barber	01-Jul-24	
Tahmoor Underground	Major Project														Complete archival photogramatory	April Hudson	01-Jul-22	
Tahmoor Underground	Major Project	Historical heritage	Heritage item (Tahmoor Mine)	Impacts to site	Loss of heritage value	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	3	E	6	3	Property Damage	Complete Heritage Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Complete specific Management Plan including TARP	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project														Engineering assessment to be conducted	Ross Barber	01-Jul-22	
Tahmoor Underground	Major Project	Historical heritage	Heritage item (Wirrimbirra Sanctuary)	Impacts to site	Loss of heritage value	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Community / Reputation	3	D	9	2	Property Damage	Complete Heritage Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project	Historical heritage	Kalinya Estate	Impacts to site	Loss of heritage value	Subsidence	* Management Plans prepared for previous longwalls for similar structures (AC)	2	Property Damage	1	E	1	1	Property Damage	Complete Heritage Management Plan, including TARP	April Hudson	01-Mar-22	
Tahmoor Underground	Major Project														Complete specific Management Plan including TARP	Amanda Bateman	01-Jul-24	

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Longwalls South 1A to 6A

	Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment			Step 3: Identify the risks, causes and potential consequences			Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk				Step 10: PMC		Step 11: Treat the Risks			
☑ Appendix B																		
Site	**Type of Risk Assessment**	**Key Element (CURA Context/Category)**	**Sub Key Element (If applicable)**	**Risk Description - Something happens……**	**Consequence - resulting in:**	**Causes - Caused by**	**Existing Control Description**	**Risk Control Effectiveness**	**Expected Consequence Category**	**Expected Risk Consequence**	**Risk Likelihood**	**Current Risk Rating**	**Potential Maximum Consequence**	**Potential Maximum Category**	**Treatment plans/tasks (Description)**	**Task Owner**	**Due Date**	**Comments**
Tahmoor Underground	Major Project	Historical heritage	MSR Heritage items (Wellers Road Bridge - Bargo Railway Bridge North)	Minor cracking to MSR heritage items	Property Damage, loss of heritage values	Subsidence	* Preliminary engineering reviews (AC) * Preliminary heritage reviews (AC) * Management Plans prepared for previous longwalls (AC) * Engagement with key stakeholders has commenced (AC) * Rail Risk Assessment completed (AC)	**2**	Property Damage	2	E	**3**	2	Property Damage	Engineering assessment to be conducted	Ross Barber	01-Jul-24	
Tahmoor Underground	Major Project														Complete specific Management Plan including TARP	Ross Barber	01-Jul-24	
Tahmoor Underground	Major Project														Complete Heritage Management Plan, including TARP	April Hudson	01-Mar-22	
	124	73		73	75	Subtotal CountA (ignoring hidden values)		86				124	124					
Tahmoor Underground	Broad Brush											#N/A						
Tahmoor Underground	Life of Mine											#N/A						
Tahmoor Underground	Business																	
Tahmoor Underground	Major Project											#N/A						
Tahmoor Underground	Environmental/Health/Process											#N/A						
Tahmoor Underground	Equipment											#N/A						

APPENDIX B – LW S7A Risk Assessment

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Update to include Longwall South 7A

Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment	Step 3: Identify the risks, causes and potential consequences	Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk	Step 10: PMC	Step 11: Treat the Risks

☑ Appendix B

Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens……	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
Approvals	Extraction Plan	Updated Extraction Plan (including LW S7A) Approval not received and delay in LW S7A start	Approval not achieved in time, delay to LW production	* Poor planning and management * DPHI delay in assessing application	* Extraction Plan for previous longwalls (LW 1A to 6A) approved and to be referenced as example * Approvals Specialist managing schedule and scope of works * All specialist consultants engaged * Weekly GM reporting	2	Financial	3	C	13	3	Financial	Extraction Plan documents to be updated and submitted by 7 October 2025	NLB	07-Oct-25	
Approvals	Extraction Plan	DPHI does not accept proposed management actions as outlined in TARPs for impacts to creeks / other environmental areas	Approval not achieved in time, delay to LW production	DPHI Policy position on mining impacts to creeks / other environmental areas	* Prior consultation as part of Modification 3 submission with DPHI Heritage NSW and other Government Agencies * Implementation of CMAP and dedicated Environmental Projects Coordinator * Design of Mine Plan layout conducted in consultation with Subsidence and Geotechnical Consultants to minimise impacts to creeks	2	Legal & Compliance	1	C	4	2	Legal & Compliance	CMAP to be implemented at the end of mining if required	NLB	01-Jun-29	
Subsidence Monitoring	Subsidence	Potential for greater than predicted subsidence over LW S7A	Greater than predicted impacts to surface and subsurface features, potential exceedance of approved level of impact	Geological movements due to subsidence	*Prior knowledge from mining LW S1A to LW S3A and future understand from mining LW S4A to LW S6A * Approvals Specialist managing report delivery to schedule * Weekly Approvals Planning meeting to review schedule and tracking to meet timeframe * Learnings from mining previous Longwalls LW 1 - 2, LWW1-LWW4, and 14 - 19 adjacent to these panels * Existing subsidence monitoring * Impact assessments takes into account potential for actual subsidence greater than predicted * Picton Weir Mangement Plan	3	Legal & Compliance	2	C	8	2	Legal & Compliance				
Subsidence Monitoring	Subsidence	Failure to implement management plan actions	Fines and prosecution	Poor planning and management	* Weekly subsidence meetings attended by Environmental and Community Team members and External Consultants * Subsidence Monitoring reports * Monthly Environmental Response Group Meeting attended by Environment and Community Team members and External Consultants	3	Legal & Compliance	1	C	4	1	Legal & Compliance				
Community Engagement	Land Owners	Stress to land owner/business owner from LW S7A	Health and Safety	* Impacts to business * Inconvenience to business * Concerns about mining * Previous relationships * Poor engagement * Mental health	* Free confidential counselling services available to all stakeholders * Develop Infrastructure Management Plan for selected properties in area and implementation * Stakeholder Engagement Plan (education of subsidence) * Information packs * Pre Mining Inspections (by SANSW) and Hazard Inspections (by Tahmoor Coal) offered to all land owners * Monthly newsletter to all residents including email contact for community * SA NSW guidelines * 24 hour emergency contact line for community (for any make safe response and repairs) * Resident Information Pack to be prepared and distributed to include LW S7A * T4C - Tahmoor Colliery Community Consultation meetings * Door knocking face to face Community Consultation * Dedicated Community Liaison Specialist *	3	Health & Safety	2	B	12	3	Health & Safety				
Community Engagement	Land Owners	Community Action Group Forms	Community Reputation	* Impacts and inconvenience to business/property owners. * Concerns about mining * Previous relationships * Poor engagement * Mental health	* Free confidential counselling services available to all stakeholders * Develop Infrastructure Management Plan for selected properties in area and implementation * Stakeholder Engagement Plan (education of subsidence) * Information packs * Pre Mining Inspections and Hazard Inspections offered to all land owners * Monthly newsletter to all residents including email contact for community * SA NSW guidelines * 24 hour emergency contact line for community * Prepared LW S1A-S6A Resident Information Pack and distributed * T4C - Tahmoor Colliery Community Consultation meetings * Door knocking face to face Community Consultation * Dedicated Community Liaison Specialist	3	Community / Reputation	2	C	8	2	Community / Reputation				
Community Engagement	Rural residences	Damage to infrastructure or buildings	Health and Safety	Subsidence	* Built Structures Management Plan * Infrastructure Management Plans * Previous history of managing properties and infrastructure * Consultation and engagement with residents * Weekly subsidence meetings attended by Environmental and Community Team members and External Consultants * Survey monitoring * Subsidence Monitoring reports * Pre Mining Inspections (by SANSW) and Hazard Inspections offered to all land owners * Front of house pre mining inspections * Weekly visual inspections conducted by building inspector as required * Draft monitoring plan being updated to inlcude LW S7A * Make safe remediation prior or during mining	3	Health & Safety	2	C	8	3	Health & Safety				
Built Infrastructure	Main Southern Railway Infrastructure	Resources Regulator does not accept proposed Management Strategy regarding rail embankments / culverts and other infrastructure	Financal Impact	* RR conservative interpretation of Engineering Reports. * Poor Project Management * Inadequate consultation.	* Learnings from previous mining beneath Main Southern Railway and Picton Mittagong Loop Line and LW S1A to LW S3A * Consultation with RR and key stakeholders * Regular Meetings with ARTC Rail Management Group * Project Schedule * ARTC Tahmoor South Governance Arrangements * Previously prepared Management Plan for Main Railway Infrastructure	2	Financial	2	D	5	2	Financial	Update existing rail management plan to include LW S7A	Ross Barber	01-Mar-27	
Built Infrastructure	Endeavour Energy Infrastructure	Adverse impacts to power poles	Reduction in clearance heights and / or excessive tilting of power poles	Subsidence	* Successful completion of management plan for LW 22-W4 and LW S1A to S3A * Previous ground survey, pole survey and visual inspection as part of LW 22 - W4 management and LW S1A to S3A management * Previous consultation, coordination and cooperation with Endeavour Energy	2	Health & Safety	2	D	5	2	Health & Safety	Update Endeavour Energy Management Plan including TARP to include additional critical poles	Ross Barber	01-Mar-27	
Built Infrastructure	Endeavour Energy Infrastructure	Adverse impacts to consumer cables to houses	Loss of serviceability, emergency repair of powerline	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey, pole survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A management * Previous consultation, coordination and cooperation with Endeavour Energy	2	Property Damage	2	D	5	2	Property Damage	Update Endeavour Energy Management Plan including TARP to include additional connections	Ross Barber	01-Mar-27	
Built Infrastructure	Sydney Water Potable Water Infrastructure	Leakage of the joints	Reduced water supply requiring emergency repair or replacement of pipework	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A management * Previous consultation, coordination and cooperation with Sydney Water	2	Property Damage	2	D	5	2	Property Damage	Review and update Sydney Water Potable Water Management Plan including TARP and susbisdence effect on 200mm CICL pipe	Ross Barber	01-Mar-27	
Built Infrastructure	Sydney Water Sewer Infrastructure	Leakage of sewage	Leakage of sewage requiring repair or replacement	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A * Previous consultation, coordination and cooperation with Sydney Water * Sydney Water design reduces potential for damage	2	Property Damage	1	D	2	1	Property Damage	Update Sydney Water Sewerage Management Plan including TARP	Ross Barber	01-Mar-27	
Built Infrastructure	Jemena gas infrastructure	Damage to gas infrastructure	Gas leak, emergency repair	Subsidence	* S3A to S7A Jemena Management Plan completed * Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A management * Previous consultation, coordination and cooperation with Jemena * Design of gas line flexible pipework * Gas is odourous - community more likely to report gas leaks if they occur * Pipeline Engineering Consultant engaged	3	Health & Safety	2	D	5	2	Health & Safety				
Built Infrastructure	Telecommunications infrastructure	Damage to copper local cable	Loss of serviceability, emergency repair or replacement of cable	Subsidence	* Telecomunication Management Plan prepared for LW S4A to LW S7A * Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A management * Previous consultation, coordination and cooperation with Telstra and NBN Co	3	Property Damage	1	D	2	1	Property Damage				
Built Infrastructure	Telecommunications infrastructure	Damage to conduit, manhole, pit and pole network	Loss of serviceability, emergency repair or replacement of cable	Subsidence	* Telecomunication Management Plan prepared for LW S4A to LW S7A * Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A management * Previous consultation, coordination and cooperation with Telstra and NBN Co	3	Property Damage	1	D	2	1	Property Damage				

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Update to include Longwall South 7A

Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment	Step 3: Identify the risks, causes and potential consequences	Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk	Step 10: PMC	Step 11: Treat the Risks

☑ Appendix B

Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens……	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
Built Infrastructure	Telstra / NBN infrastructure	Damage to optical fibre cables	Loss of serviceability, emergency repair or replacement of cable	Subsidence	* Telecomunication Management Plan prepared for LW S4A to LW S7A * Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A management * Previous consultation, coordination and cooperation with Telstra and NBN Co	3	Property Damage	2	D	5	2	Property Damage				
Built Infrastructure	Council Infrastructure	Minor cracking or heaving of pavement, kerbs and gutters	Slight damage to road, requiring repair. Reduced maintenance life	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management t and LW S1A to S3A management * Previous consultation, coordination and cooperation with Wollondilly Shire Council	2	Property Damage	2	B	12	2	Property Damage	Review Wollondilly Shire Council Management Plan including TARP	Ross Barber	01-Mar-27	
Built Infrastructure	Council Infrastructure	Major cracking or heaving of pavement, kerbs and gutters	Extensive damage to road, requiring emergency repair and extension rehabilitation	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management t and LW S1A to S3A management * Previous consultation, coordination and cooperation with Wollondilly Shire Council	2	Property Damage	3	E	6	3	Property Damage	Review Wollondilly Shire Council Management Plan including TARP	Ross Barber	01-Mar-27	
Built Infrastructure	Council Infrastructure	Damage to culverts and stormwater infrastructure	Reduced maintenance life; sealing / localised repair or loss of serviceability requiring emergency repair and/or replacement of culverts	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A management * Previous consultation, coordination and cooperation with Wollondilly Shire Council	2	Property Damage	2	D	5	2	Property Damage	Review Wollondilly Shire Council Management Plan including TARP	Ross Barber	01-Mar-27	
Built Infrastructure	Picton Weir	Damage to weir	Loss of structural integrity	Subsidence	* Approved management Plan for LW S4A to S7A * Previous ground survey and visual inspection as part of LW W1-W4 management and LW S1A to S3A * Previous consultation, coordination and cooperation with Wollondilly Shire Council and Crown Land * Weir Risk Assessment and Management Plan	3	Property Damage	4	D	14	4	Property Damage				
Built Infrastructure	Permanent Survey Control Marks	Movement of survey control marks	Errors in measurements	Subsidence	* Preparation of previous POSI applications of predicted subsidence movements of the permanent survey control marks	2	Property Damage	1	A	11	1	Property Damage	Notify Spatial Services via POSI application of predicted subsidence movements of the permanent survey control marks	Natalie Brumby	01-Mar-27	Currently half yearly commitment
Built Infrastructure	Permanent Survey Control Marks	Use of survey control marks by general surveyors during and after mining, affecting results (prior to re-calibration)	Errors in measurements	Subsidence	* POSI application of predicted subsidence movements of the permanent survey control marks completed for LW 32 - W4 and LW S1A to S3A * Ongoing monitoring and review of far field monitoring network, including GNSS network	2	Property Damage	1	A	11	1	Property Damage	Complete POSI application for LW S7A	Natalie Brumby	01-Mar-27	Currently half yearly commitment
Built Infrastructure	Built Structures	Impact on health and safety of people	Injury to person	Subsidence resulting in failure of a structural element	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A * Previous consultation, coordination and cooperation with residents * Completion of Pre-mining (SANSW) and subsidence hazard inspections (by Tahmoor Coal if approved by landowner)	2	Health & Safety	3	E	6	3	Health & Safety	Review and update Built Structures Management Plan including TARP	Ross Barber	01-Mar-27	SANSW conducting PMI from start of LW S5A
Built Infrastructure	Built Structures	Damage to structures	Repair of structures	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A * Previous consultation, coordination and cooperation with residents * Completion of Pre-mining (SANSW) and subsidence hazard inspections (by Tahmoor Coal if approved by landowner) * SANSW Claims Process	2	Property Damage	3	D	9	3	Property Damage	Review and update Built Structures Management Plan including TARP	Ross Barber	01-Mar-27	Unknown effects of the legislation and Tahmoor access to the property - SANSW conducting PMI from start of LW S5A
Built Infrastructure	Pools	Impact on health and safety of people	Injury to person / single fatality	Subsidence causing damage to pool gate or fence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to S3A * Previous consultation, coordination and cooperation with residents * Completion of Pre-mining (SANSW) and subsidence hazard inspections (by Tahmoor Coal if approved by landowner)	2	Health & Safety	4	E	10	4	Health & Safety	Review and update Built Structures Management Plan including TARP	Ross Barber	01-Mar-27	Unknown effects of the legislation and Tahmoor access to the property - SANSW conducting PMI from start of LW S5A
Built Infrastructure	Pools	Damage to pools	Repair of pools or plant	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LW S1A to LW S3A * Previous consultation, coordination and cooperation with residents * Completion of Pre-mining (SANSW) and subsidence hazard inspections (by Tahmoor Coal if approved by landowner)	2	Property Damage	2	C	8	2	Property Damage	Review and update Built Structures Management Plan including TARP	Ross Barber	01-Mar-27	Unknown effects of the legislation and Tahmoor access to the property - SANSW conducting PMI from start of LW S5A
Built Infrastructure	Septic tanks	Damage to septic tanks	Repair of tanks	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management * Previous consultation, coordination and cooperation with residents * Completion of Pre-mining (SANSW) and subsidence hazard inspections (by Tahmoor Coal if approved by landowner)	2	Property Damage	1	D	2	1	Property Damage	Review and update Built Structures Management Plan including TARP	Ross Barber	01-Mar-27	SANSW conducting PMI from start of LW S5A
Built Infrastructure	Private groundwater bores	Impacts to groundwater bore / pump loss / water levels change / water quality changes	Repair of bore / pump / lower pump / make good	Subsidence	* Management Plans prepared for previous longwalls * Previous private bore census and visual inspection as part of LW 22-W4 management and LW S1A to LW S3A * Previous consultation, coordination and cooperation with residents * Make good procedure	2	Property Damage	2	C	8	2	Property Damage				No additional private bores in LW S7A study area
Built Infrastructure	Bargo Cemetery	Damage to items at the Bargo Cemetery	Potential impacts to heritage significance of property	Subsidence	*WSC management updated to include cemetery * Management Plans prepared for previous longwalls for similar structures *Heritage assessment completed *Detailed PMI completed *Survey monitoring completed * TARP	2	Property Damage	1	D	2	1	Property Damage	Review and update WSC management Plan	Ross Barber	01-Mar-27	Cemetery included in WSC MP
Built Infrastructure	Inghams	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures	2	Property Damage	2	D	5	2	Property Damage	Complete specific Management Plan including TARP	Ross Barber	01-Mar-26	Management plan to be completed before 600m extraction on LW S5A
			Health and Safety			2	Health & Safety	1	E	1	1	Health & Safety	Complete specific Management Plan including TARP	Ross Barber	01-Mar-26	Management plan to be completed before 600m extraction on LW S5A
Built Infrastructure	Bargo Valley Produce	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures	2	Property Damage	1	D	2	1	Property Damage	Complete specific Management Plan including TARP	Ross Barber	01-Mar-26	Management plan to be completed before 600m extraction on LW S5A
						2	Health & Safety	1	E	1	1	Health & Safety	Complete specific Management Plan including TARP	Ross Barber	01-Mar-26	Management plan to be completed before 600m extraction on LW S5A
Built Infrastructure	Canine Country Club	Damage to structures	Damage to structures	Subsidence	* Management Plans prepared for previous longwalls for similar structures	2	Property Damage	1	D	2	1	Property Damage	Complete specific Management Plan including TARP	Ross Barber	01-Mar-26	Management plan to be completed before 600m extraction on LW S5A
						2	Health & Safety	2	E	3	2	Health & Safety	Complete specific Management Plan including TARP	Ross Barber	01-Mar-26	Management plan to be completed before 600m extraction on LW S5A
Built Infrastructure	Wellers Road Overbridge	Damage to strcutures	Damage to Structure	Subsidence	*Existing TfNSW management Plan for Wellers Road Overbridge for LW S4A to LW S7A * Management Plans prepared for previous longwalls for similar structures	2	Property Damage	2	E	3	2	Property Damage				
Surface Water	Pool water level and streamflow	Fracturing of creek beds and/or water table drawdown	Reduction in pool holding capacity, water level, connective streamflow; Changes in natural drainage behaviour; Reduction in channel bank stability	Subsidence	* Existing monitoring for LW S1A-S6A * Assessment completed as part of Modification 3 by surface water consultant, impacts assessed to be negligeable * Mine design * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * Implementation of CMAP and proven remediation success and dedicated Environmental Projects Coordinator	2	Environment	2	D	5	2	Environment	Review and Update Water Management Plan	NLB	07-Oct-25	
Surface Water	Water quality	Fracturing of creek beds, gas emissions occur	Decrease in water quality in creeks (pH, EC, heavy metals)	Subsidence	* Existing monitoring for LW S1A-S6A * Assessment completed as part of Modification 3 by surface water consultant, impacts assessed to be negligeable * Mine design * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * Implementation of CMAP and proven remediation success and dedicated Environmental Projects Coordinator	2	Environment	2	D	5	2	Environment	Review and Update Water Management Plan	NLB	07-Oct-25	
Surface Water	Overland Flow	Alteration of topography, vertical subsidence	Change in catchment run off characteristics and increase in localised ponding	Subsidence	* Existing monitoring for LW S1A-S6A * Assessment completed as part of Modification 3 by surface water consultant, impacts assessed to be negligeable * Mine design * Management Plans prepared for previous longwalls	2	Environment	1	D	2	2	Environment	Review and Update Water Management Plan	NLB	07-Oct-25	
Surface Water	Farm Dams	Change in catchment run off characteristics	Localised ponding, reduction in water level in dams	Subsidence	* Existing monitoring for LW S1A-S6A * Assessment completed as part of Modification 3 by surface water consultant, impacts assessed to be negligeable * Mine design * Management Plans prepared for previous longwalls	2	Property damage	2	D	5	2	Property Damage	Review and Update Water Management Plan	NLB	07-Oct-25	
Surface Water/Landscape Features	Channel and Bank Stability Erosion and Increased Sedimentation Run off	Reduction in Channel and Bank Stability	Increased erosion and sedimentation	Subsidence	* Existing monitoring for LW S1A-S6A * Assessment completed as part of Modification 3 by surface water consultant, impacts assessed to be negligeable * Mine design * Management Plans prepared for previous longwalls	2	Environment	1	E	1	1	Environment	Review and Update Water Management Plan	NLB	07-Oct-25	

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Update to include Longwall South 7A

Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment	Step 3: Identify the risks, causes and potential consequences	Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk	Step 10: PMC	Step 11: Treat the Risks

☑ Appendix B

Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens……	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
Groundwater	Groundwater level	Fracturing of geological strata	* Adverse effects to private bores * Repair of bore / pumps	Subsidence	* Existing monitoring for LW S1A-S6A * Assessment completed as part of Modification 3 by groundwater consultant, impacts assessed to be negligeable and current monitoring network suitable * Make good procedure * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * Previous private bore census and visual inspection as part of LW 22-W4 management	2	Environment	3	C	13	4	Environment	Review and Update Water Management Plan	NLB	07-Oct-25	
Groundwater	Groundwater level	Groundwater drawdown causing loss of yield	Increased pumping costs. Reduced access to water.	Depressurisation	* Existing monitoring for LW S1A-S6A * Assessment completed as part of Modification 3 by groundwater consultant, impacts assessed to be negligeable (drawdown expected as part of LW S1A-S6A) * Make good procedure * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * Previous private bore census and visual inspection as part of LW 22-W4 management and Lw S1A to LW S3A	2	Community / Reputation	3	C	13	4	Environment	Review and Update Water Management Plan	NLB	07-Oct-25	
Groundwater	Water quality	Adverse impact to groundwater aquifers	Adverse effects to private bores	Subsidence	* Existing monitoring for LW S1A-S6A * Assessment completed as part of Modification 3 by groundwater consultant, impacts assessed to be negligeable (drawdown expected as part of LW S1A-S6A) * Make good procedure * Pre existing bore water census * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls	2	Environment	4	C	18	4	Property Damage	Review and Update Water Management Plan	NLB	07-Oct-25	No change due to 7A
Groundwater	Thirlmere Lakes	Loss of water	Impacts to surface water / ground water conectivity and lake water levels	Depressurisation	* Mine design * Existing monitoring program by NSW Government * Review of analysis by TLRP * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls	2	Environment	4	D	14	4	Environment	Review and Update Water Management Plan	NLB	07-Oct-25	No change due to 7A
						2	Community / Reputation	4	D	14	4	Community / Reputation	Review and Update Water Management Plan	NLB	07-Oct-25	No change due to 7A
Landscape features	Steep slopes	Tension cracks, compression ridges, soil slump / failure	Serviceability of roadway / impacts to traffic	Subsidence	* Geotechnical Engineer assessment and report where the slopes are near road embarkments within the study area completed for LWS1A-LWS6A * LW 7SA modification report completed * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * Previous consultation, coordination and cooperation with landowners / residents * Visual inspections during mining	2	Property Damage	2	D	5	3	Property Damage	Completed geotechnical assessment for LWS7A study area for natural features Review and update Land Management Plan for landscape features (including steep slopes and road embankments), including TARP	NLB	07-Oct-25	
						2	Health & Safety	3	E	6	3	Health & Safety	Review and update Public Safety Management plan	NLB	07-Oct-25	
Landscape features	Cliffs	Rock fall/cliff regression	Personnel injury	Subsidence	* Mine Plan * Geotechnical Engineer assessment and report where the cliffs are near road embarkments within the study area for LWS1A to LWS6A * LW 7SA modification report completed * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * Visual inspections during mining	2	Health & Safety	3	E	6	3	Health & Safety	Completed geotechnical assessment for LWS7A study area for natural features Review and update Land Management Plan for landscape features (including steep slopes and road embankments), including TARP	NLB	07-Oct-25	
						2	Health & Safety	3	E	6	3	Health & Safety	Review and update Public Safety Management plan to incorporate signage and communication regarding subsidence.	NLB	07-Oct-25	
Landscape features	Farm dams	Damage to farm dams	Leak of dam water / dam failure, cascading dam failure	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LWS1A to LWS3A management * LW 7SA modification report completed * Previous consultation, coordination and cooperation with residents	2	Property Damage	2	D	5	2	Property Damage	Completed geotechnical assessment for LWS7A study area for Dam Review and update Land Management Plan for landscape features (including farm dams), including TARP	NLB	07-Oct-25	
Landscape features	Farm dams	Damage to farm dams	Personnel injury	Subsidence	* Management Plans prepared for previous longwalls * Previous ground survey and visual inspection as part of LW 22-W4 management and LWS1A to LWS3A management * LW 7SA modification report completed * Previous consultation, coordination and cooperation with residents	2	Health & Safety	2	E	3	2	Health & Safety	Completed geotechnical assessment for LWS7A study area for natural features Review and update Land Management Plan for landscape features (including farm dams), including TARP	NLB	07-Oct-25	
Aquatic ecology	Aquatic habitat / Macroinvertebrates / fish	Fracturing of creek beds and/or water table drawdown	Reduction in pool connectivity / holding capacity / flow, change in water quality resulting in change in-stream vegetation and aquatic habitat.	Subsidence	* Mine design * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * BDAR updated for LW S7A * Biodiversity monitoring being undertaken (baseline and LW S1A- S6A program) * Proven creek remediation program undertaken to restore pool holding capacity	2	Environment	3	E	6	5	Environment	Review and update Biodiversity Management Plan, including TARP	NLB	07-Oct-25	
Aquatic ecology	Threatened aquatic species and habitat	Fracturing of creek beds and/or water table drawdown	Reduction in pool holding capacity / flow resulting in decreased in threatened aquatic species	Subsidence	No known threatened aquatic species and habitat.	3	Environment	1	E	1	1	Environment				
Terrestrial ecology	Riparian vegetation	Fracturing of creek beds, emissions of gas	Riparian vegetation die-back, tree fall	Subsidence	* Mine design * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * BDAR updated for LW S7A * Riparian monitoring program being underaken (baseline and LW S1A- S6A program)	2	Environment	1	E	1	1	Environment	Review and update Biodiversity Management Plan, including TARP	NLB	07-Oct-25	
Terrestrial ecology	Threatened ecological communities	Fracturing of creek beds, emissions of gas	Riparian vegetation die-back, tree fall	Subsidence	* Mine design * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * BDAR updated for LW S7A * Riparian monitoring program being underaken (baseline and LW S1A- S6A program)	2	Environment	1	E	1	1	Environment	Review and update Biodiversity Management Plan, including TARP	NLB	07-Oct-25	
Terrestrial ecology	Threatened Amphibians	Decline in pool holding capacity	Impacts to amphibian habitat	Subsidence	No known threatened Amphibians	3	Environment	1	E	1	1	Environment				
Terrestrial ecology	Threatened Flora	Fracturing of creek beds, emissions of gas	Dieback of threatened flora populations (Pomederris Brunnea) along tee tree hollow creek	Subsidence	* Mine design * Management Plans prepared for previous longwalls * Previous monitoring completed for previous longwalls * BDAR updated for LW S7A * Riparian monitoring program being underaken (baseline and LW S1A- S6A program)	2	Health & Safety	1	E	1	1	Environment	Review and update Biodiversity Management Plan, including TARP	NLB	07-Oct-25	
Aboriginal heritage	Shelter with art and/or deposit	Fracturing of shelter structure	Loss of heritage values	Subsidence	* Aboriginal cultural heritage assessment completed by heritage consultant * Management Plans for previous Longwall W1 - W4 and LW S1A to S6A	2	Environment	4	E	10	2	Environment	Review and update Heritage Management Plan, including TARP	NLB	07-Oct-25	
Aboriginal heritage	Surface scatters / isolated find	Disturbance of scatters	Loss of heritage values	Subsidence	* Aboriginal cultural heritage assessment completed by heritage consultant * Management Plans for previous Longwall W1 - W4 and LW S1A to S6A	2	Environment	1	E	1	1	Environment	Review and update Heritage Management Plan, including TARP	NLB	07-Oct-25	
Historical heritage	Heritage item (Bargo Cemetery)	Impacts to site	Loss of heritage value	Subsidence	* Detailed PMI completed * Heritage assessment completed by heritage consultant * Management Plans prepared for previous longwalls for similar structures	2	Property Damage	1	E	1	1	Property Damage	Review and update Heritage Management Plan, including TARP	NLB	07-Oct-25	
													Review and update WSC Management Plan including TARP	Ross Barber	01-Mar-26	
Historical heritage	MSR Heritage items (Wellers Road Bridge - Bargo Railway Bridge North)	Minor cracking to MSR heritage items	Property Damage, loss of heritage values	Subsidence	* Preliminary engineering reviews * Preliminary heritage reviews * Management Plans prepared for previous longwalls * Rail Risk Assessment completed *TfNSW management Plan completed - LW S4A-S7A * Monitoring in place	2	Property Damage	2	E	3	2	Property Damage	Review and update Heritage Management Plan, including TARP	NLB	07-Oct-25	
Historical heritage	Picton Weir	Cracks to weir	Property Damage, loss of heritage values	Subsidence	* Geotechnical investigation completed * structural assessment and dam break analysis completed *Picton weir management Plan completed - LW S4A-S7A * Survey monitoring implemented	2	Property Damage	2	D	5	2	Property Damage	Review and update Heritage Management Plan, including TARP	NLB	07-Oct-25	
Historical heritage	Great Southern Road (between rail corridor and Bargo cemetery road easement)	Damage to road surface	Property Damage, loss of heritage values	Subsidence	* Heritage assement completed for LW S1A to S6A * Modification 3 report completed	2	Property Damage	2	E	3	2	Property Damage	Review and update Heritage Management Plan, including TARP	NLB	07-Oct-25	
													Review and update WSC Management Plan, including TARP	Ross Barber	01-Mar-26	

Major Project Risk Assessment: Tahmoor Underground - Extraction Plan Update to include Longwall South 7A

Step 2: Assess Type; Key Elements-These change depending on TYPE of Risk Assessment		Step 3: Identify the risks, causes and potential consequences			Step 4: Identify the existing controls to manage the identified risks	Step 5: Determine RCE	Steps 6, 7 & 8: Determine the Expected Consequence / Likelihood applicable to the Expected Consequence / Current level of risk				Step 10: PMC		Step 11: Treat the Risks			
Appendix B																
Key Element (CURA Context/Category)	Sub Key Element (If applicable)	Risk Description - Something happens……	Consequence - resulting in:	Causes - Caused by	Existing Control Description	Risk Control Effectiveness	Expected Consequence Category	Expected Risk Consequence	Risk Likelihood	Current Risk Rating	Potential Maximum Consequence	Potential Maximum Category	Treatment plans/tasks (Description)	Task Owner	Due Date	Comments
58		58	59	Subtotal CountA (ignoring hidden values)		64				65	65					
										#N/A						
										#N/A						
										#N/A						
										#N/A						
										#N/A						