



**918 Panel
Land Management Plan**

Clarence Colliery

April 2026

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1 BACKGROUND

1.1 Introduction

Clarence Colliery (Clarence) is an underground coal mining operation located 10 kilometres east of Lithgow in the Western Coalfields of New South Wales (Figure 1). Clarence Colliery Pty Ltd is the operator and manager of Clarence on behalf of the shareholding entities, all of which are fully owned subsidiaries of Centennial Coal Company Pty Ltd.

Clarence operates under three development consents, one of which is DA 504-00 which was granted in 2005 by the NSW Department of Infrastructure, Planning and Natural Resources, currently the Department of Planning, Housing and Infrastructure (DPHI). Clarence holds Mining Lease (ML) 1583 which lies within the area associated with DA 504-00. DA 504-00 limits mining activities to partial extraction mining methods and limits subsidence to 100 millimetres (mm).

Under DA 504-00, an Extraction Plan is required to be developed and approved prior to undertaking secondary extraction (schedule 3 condition 2 and 2A). The Extraction Plan describes the applicable regulatory framework, mine planning, management and monitoring measures to be implemented to protect all natural and built features in addition to administering public safety measures associated with secondary extraction.

Condition 2g (v), Schedule 3 of DA 504-00 requires the development of a Land Management Plan to support an Extraction Plan for second workings. This 918 Panel Land Management Plan (LMP) has been developed in accordance with DA 504-00 requirements for the extraction of the 918 Panel, within the Katoomba seam. The Extraction Plan and LMP have been prepared generally in accordance with the Department of Planning & Environment, *Extraction Plan Guideline* (2022) and the Resources Regulator, *Managing Risks of Subsidence Guide: WHS (Mines and Petroleum Sites) Legislation* (2023).

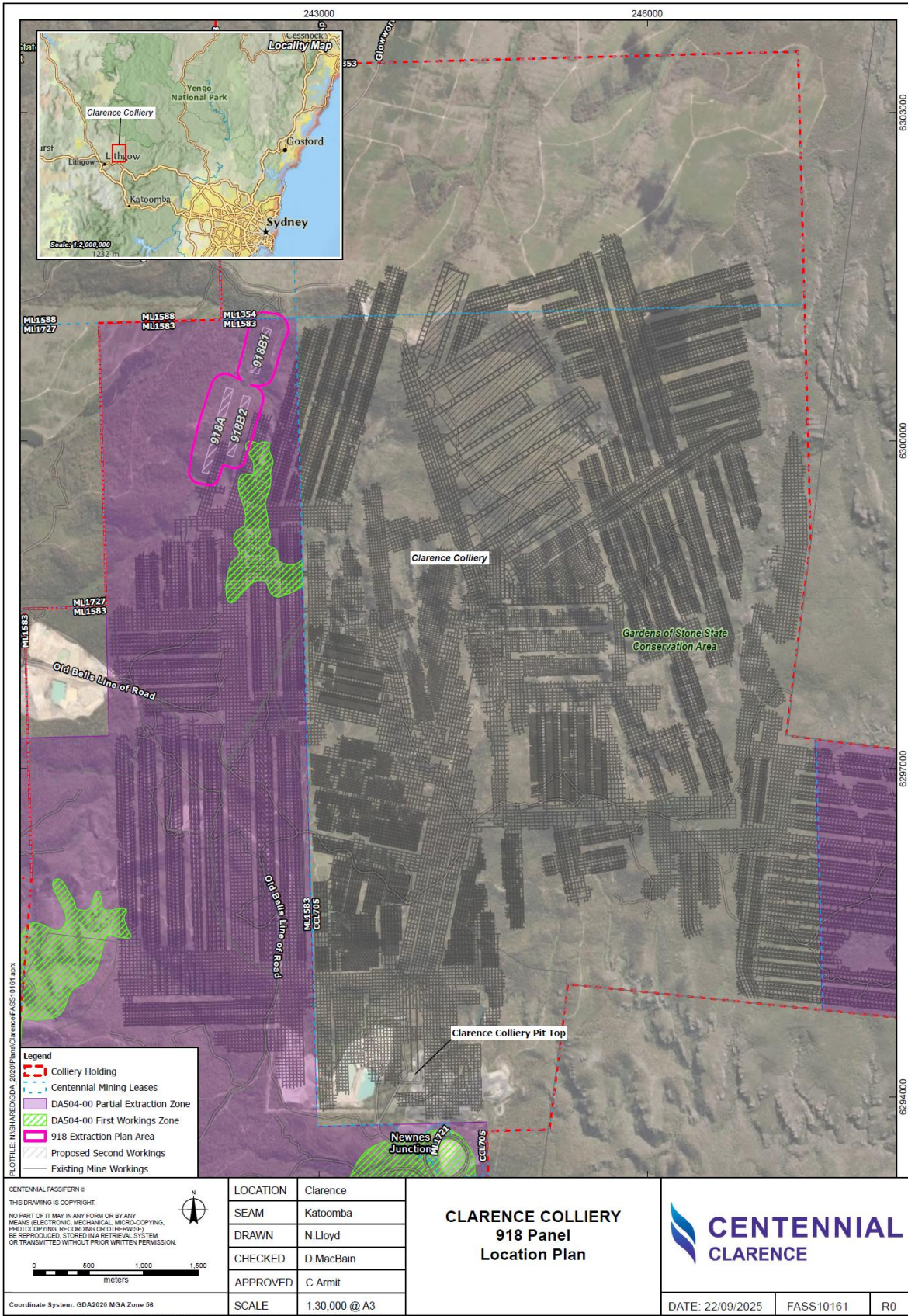


Figure 1 – Location

2 Purpose

The purposes of this LMP is to satisfy Schedule 3, condition 2(g)(v) of DA 504-00 by defining the cliffs, minor cliffs, pagodas, and steep slopes within the 918 Panel EP Area. This LMP details the management of potential impacts and/or environmental consequences of the proposed 918 Panel second (underground) workings – on the aforementioned natural features and the land in general.

3 Scope

3.1 Extraction Plan Area

The Extraction Plan area is defined by the outer extents of the 918 sub-panel's 35° Angle of Draw polygon and the predicted 20 mm subsidence contour (Figure 1).

The Extraction Plan area comprises a surface area of approximately 87.5 hectares. The depth of cover above the Katoomba Seam in this area ranges from approximately 174 m to 329 m. The entire Extraction Plan area lies within the Gardens of Stone State Conservation Area (GoS SCA) managed by the National Parks and Wildlife Service (NPWS). The existing surface environment of the Extraction Plan area includes watercourses; Bungleboori and Paddys Creeks and tributaries, Newnes Plateau Shrub and Hanging swamps, native bushland, steep slopes, pagodas, minor cliffs, cliffs and archaeological heritage sites.

Other than the Clarence environmental and subsidence monitoring equipment there are only unsealed (and unnamed) tracks and trails as built features within the Extraction Plan area. These tracks and trails are managed by NPWS. There are no sealed or named roads, dwellings, power lines, telecommunication cables or other non-Clarence owned infrastructure within the Extraction Plan area.

3.2 Land ownership

The GoS SCA makes up the entire Extraction Plan Area. Prior to the declaration of the GoS SCA the area was designated as the Newnes State Forest for forestry purposes and has historically also been used for a variety of recreational activities including four-wheel driving, trail bike riding, horse riding, mountain biking, birdwatching, bushwalking and rock climbing (NPWS, 2022). The GoS SCA is planned to continue to provide for a range of sustainable recreation activities while also supporting new tourism and recreational experiences. The Extraction Plan Area is located outside any of the planned accommodation nodes (NPWS, 2022).

NPWS have prepared and finalised a plan of management for the GoS SCA (DPE, 2022). Part of the strategy of the plan of management is to develop and implement environmental management plans to minimise impacts on SCA values arising from mining activities, monitoring, mining infrastructure and mining decommissioning/rehabilitation works. Centennial are working with NPWS on the development of decommissioning schedules for existing infrastructure. This includes both installation and removal of monitoring features such as survey, access roads and environmental monitoring points within the SCA in a timely and appropriate manner post extraction of the 918 Panel.

4 Consultation and Plan Development

The LMP is required to be prepared in consultation with the DPHI and any affected public authorities as per Schedule 3 (Specific Environmental Conditions) conditions 2 g (v) (Table 3). Affected parties were deemed to be the land manager, NPWS.

A draft of the 918 and 920 Panels LMP was provided to Clarence employees with roles and responsibilities under the SMP for review. Additionally, a draft copy of the 918 and 920 Panels LMP was provided to DPE and NPWS in November 2023. The document was updated in response to comments received, and the final 918 and 920 SMP was submitted with the 918 and 920 Panel Extraction Plan on the planning portal in April 2024. The Independent Expert Advisory Panel for Mining (IEAPM) was provided with the 918 and 920 Panels Extraction Plan and associated documentation by DPHI.

Following regulatory and IEAPM feedback in 2024, the 918 and 920 Panels Extraction Plan was withdrawn in October 2024. The mine plan was changed to avoid key natural features resulting in the removal of the 920 panel, reduction in 918 sub-panels lengths and void widths and increases in subsidence and environmental monitoring. The 918 LMP has been developed as a revised version of the original 918 and 920 Panels LMP. This updated 918 LMP document incorporates the consultation outcomes from the earlier draft.

A copy of the draft 918 LMP was provided to DPHI and NPWS on 26 February 2026, via the DPHI planning portal. Evidence and a summary of the 918 Panel LMP consultation carried out is provided Appendix 1. A copy of the final 918 LMP was provided to DPHI on the 24 April 2026, via the DPHI planning portal with the associated 918 Panel Extraction Plan documents.

5 Regulatory Requirements

Clarence operations are conducted in accordance with relevant legislation and requirements of statutory authorities. Legislative and regulatory requirements are generally recognised through the imposition of conditions on the development consent, licences and mining approvals.

5.1 Development Consent

Development Consent DA 504-00 provides a number of conditions relating to the preparation of the LMP. These conditions are summarised in Table 1 below, together with the notation of the section within this LMP where each matter is addressed.

Table 1– Development Consent (DA504-00) Conditions

Condition	Condition	Section Addressed
Schedule 3 Condition 2 g (v)	Land Management Plan which: <ul style="list-style-type: none"> has been prepared in consultation with any affected public authorities; provides for the management of potential impacts and/or environmental consequences of the proposed underground workings on land in general, with a specific focus on cliffs, pagodas, steep slopes and gorges 	Section 4 Section 6 Section 8 Section 10

Condition	Condition	Section Addressed
Schedule 3 Condition 2 g (viii)	(viii) Trigger Action Response Plan/s, which contain: <ul style="list-style-type: none"> • 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 impact assessment criteria in Table 1 or condition 5, or where any such exceedance appears likely 	Section 10 Appendix 2
Schedule 3 Condition 2 g (ix)	(ix) Contingency Plan that expressly provides for: <ul style="list-style-type: none"> • adaptive management where monitoring indicates that there has been an exceedance of any impact assessment criteria in Table 1 or condition 5, 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 	Section 10 Section 12

5.2 Mining Leases

The second workings in the proposed 918A, 918B1 and 918B2 sub-panels are located within ML1583. Apart from the requirement to develop a Rehabilitation Management Plan and related documents, there are no specific conditions that relate to the development of a LMP within ML 1583.

5.3 Extraction Plan Guidelines

The Extraction Plan and the LMP have been prepared generally in accordance with the Department of Planning & Environment, Extraction Plan Guideline (2022).

5.4 Work Health and Safety Legislation

Clarence has developed a Safety Management System that integrates plans, policies and procedures that enables a systematic approach to establishing and maintaining effective systems to manage health and safety consistent with WHS legislation and AS/NZS 4804:2001.

The following Work, Health and Safety (WHS) requirements have been considered for the Extraction Plan principally within the context of subsidence related risks to public safety, including to private property and public infrastructure and in reference to Managing Risks of Subsidence Guide: WHS (Mines and Petroleum Sites) Legislation (Resources Regulator, 2023).

6 Landscape Features

The landscape features present on the surface of the 918 EP Area include; steep slopes, minor cliffs, cliffs, pagodas, groundwater dependent ecosystems (GDE), cultural heritage sites, built features and infrastructure, valleys, ridges, flora and fauna, endangered ecological communities (EEC), creeks, drainage lines and swamps. The LMP required by DA 504-00 (Schedule 3 condition 2) refers to the *“land in general, with a specific focus on, cliffs, pagodas, steep slopes and gorges”*. The other above mentioned features (i.e. GDEs, cultural heritage sites, built features and infrastructure, valleys, ridges, flora and fauna, creeks, EECs, drainage lines and swamps) are managed under other management plans as detailed in Table 2.

Table 2 – Landscape Features within EP Area and relevant management plans

Landscape Feature	Identification and Assessment	Management and Monitoring
Cliffs, Pagodas, steep slopes and Gorges Land in general (landform, valleys and ridges)	918 Panel Subsidence Predictions and Impact Assessment (MSEC, 2026a)	918 Panel : - Land Management Plan - Public Safety Management Plan (Centennial, 2026b) - Subsidence Monitoring Program (Centennial, 2026c)
Creeks and water courses (Bungleboori Creek and Paddys Creek and tributaries)	918 Panel Subsidence Predictions and Impact Assessment (MSEC, 2026a) Geotechnical, Subsidence and Caving Assessment for 918 Panel (SCT, 2026) Bungleboori and Paddys Creek Geomorphological Assessment - 918 Panel Area (GHD, 2025)	918 Panel: - Water Management Plan (GHD, 2026) - Subsidence Monitoring Program (MSEC, 2026c)
Groundwater	918 Panel Subsidence Predictions and Impact Assessment (MSEC, 2026a) Groundwater Model Report (JBSG, 2026) Groundwater Peer Review Report (GHD, 2026)	918 Panels: - Water Management Plan (GHD, 2026) - Subsidence Monitoring Program (MSEC, 2026c)
Cultural and Historic Heritage Sites	Heritage Management Plan (Umwelt, 2026) 918 Panel Subsidence Predictions and Impact Assessment (MSEC, 2026a) Geotechnical, Subsidence and Caving Assessment for 918 Panel (SCT, 2026) DA 504-00 and EIS	918 Panels: - Heritage Management Plan (Umwelt, 2026)
Built Features and Surface Infrastructure (access tracks and trails, mine infrastructure)	Subsidence Predictions and Impact Assessment for 918 Panel (MSEC, 2026a) Dial before you dig check NPWS Tracks GIS data	918 Panel: - Built Features Management Plan (Centennial, 2026)
Biodiversity including aquatic and terrestrial flora and fauna, threatened species, EECs and GDEs (Temperate Highland Peat Swamps on Sandstone)	DA 504-00 EIS RPS Swamp mapping Subsidence Predictions and Impact Assessment for 918 Panel (MSEC, 2026a) Biodiversity Management Plan	918 Panel: - Biodiversity Management Plan (RPS, 2026) - Water Management Plan (GHD, 2026)

6.1 LMP Landscape Features

This Section introduces the specific landscape features applicable to the LMP within the EP Area and include:

- Cliffs, pagodas, steep slopes and gorges; and
- Land (in general).

The Clarence DA 504-00 does not specifically define cliffs, minor cliffs, pagodas, gorges and steep slopes, therefore contemporary definitions have been adopted as set out below.

Steep slopes

An area of land having a gradient between 1 Vertical (**V**) in 3 Horizontal (**H**) (33% or 18.3°) and 2V in 1H (200% or 63.4°).

Minor cliff

A continuous rock face, including overhangs, having a minimum length of 20 m, a height between 5 m and 10 m, and a minimum slope of 2V to 1H (> 63.4°).

Cliff

Continuous rock face, including overhangs, having a minimum length of 20 m, a minimum height of 10 m and a minimum slope of 2V to 1H (> 63.4°).

Pagoda

Conical or sub-conical rock formations, whether smooth, platy, stepped or terraced.

Gorge

A deep, narrow valley with cliffs or minor cliffs on both sides.

These features have been identified and mapped within the 918 Panels EP Area using the following methods:

- Desktop analysis of raw LiDAR surveys of the ground surface, using GIS software and programming techniques;
- cross-checking results to confirm accuracy of programming techniques;
- cross-checking results using videos and images collected by drone;
- Desktop analysis of topographical data, generation of cross sections and interrogation of height, length and slope details for each identified rock feature;
- cross-checking results using aerial photography and/or other software visualisation tools ie. hillshade; and
- On site visual inspection, physical spot measurements and photography of landscape features to ground truth desktop data.

It is noted that there are no gorges present within the EP Area.

A number of field inspections have been undertaken throughout 2022 to 2025 to map and photograph the identified landscape features. During the field inspections the following was undertaken:

- Recording the presence of the feature;
- Photograph with Theodolite App which provides time/date stamp, coordinates, bearing, azimuth;
- Track mapping with hand held GPS, offset from cliff top to provide ground truthed data to compare against topographic contours developed from LiDAR;
- Measurement of slope angle and feature height; and
- Geological comments on undercuts, groundwater make, rock type, features.

6.1.1 Cliffs, Minor Cliffs and Pagodas

Cliffs, minor cliffs and pagodas are a primary focus for protection of sensitive surface features at Clarence and subsequently for mine design and subsidence management. There are no gorges

mapped or identified within the EP Area as there were no narrow valleys with cliffs or minor cliffs on both sides within the EP Area.

None of the cliffs, minor cliffs or pagodas are located directly above the proposed 918A, 918B1 and 918B2 sub-panels. Figure 3 and Figure 4 present, in more detail, the cliffs, minor cliffs and pagodas that exist over the EP Area. Table 3 presents the details for each mapped feature located within the EP Area, including their location in the context of the mine layout, their height and their length.

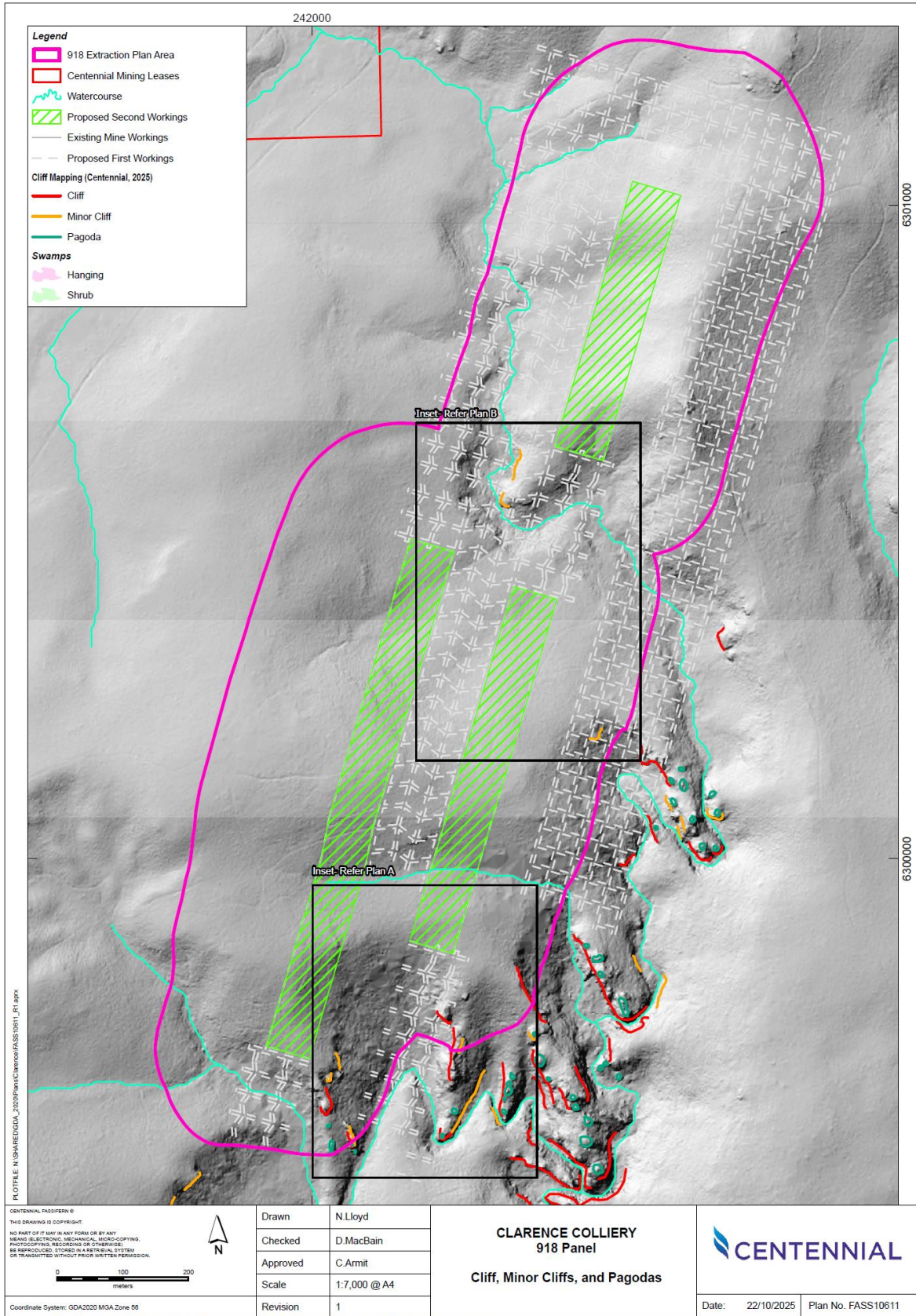


Figure 2 – Cliffs, minor cliffs and Pagodas (Hillshade Analysis)

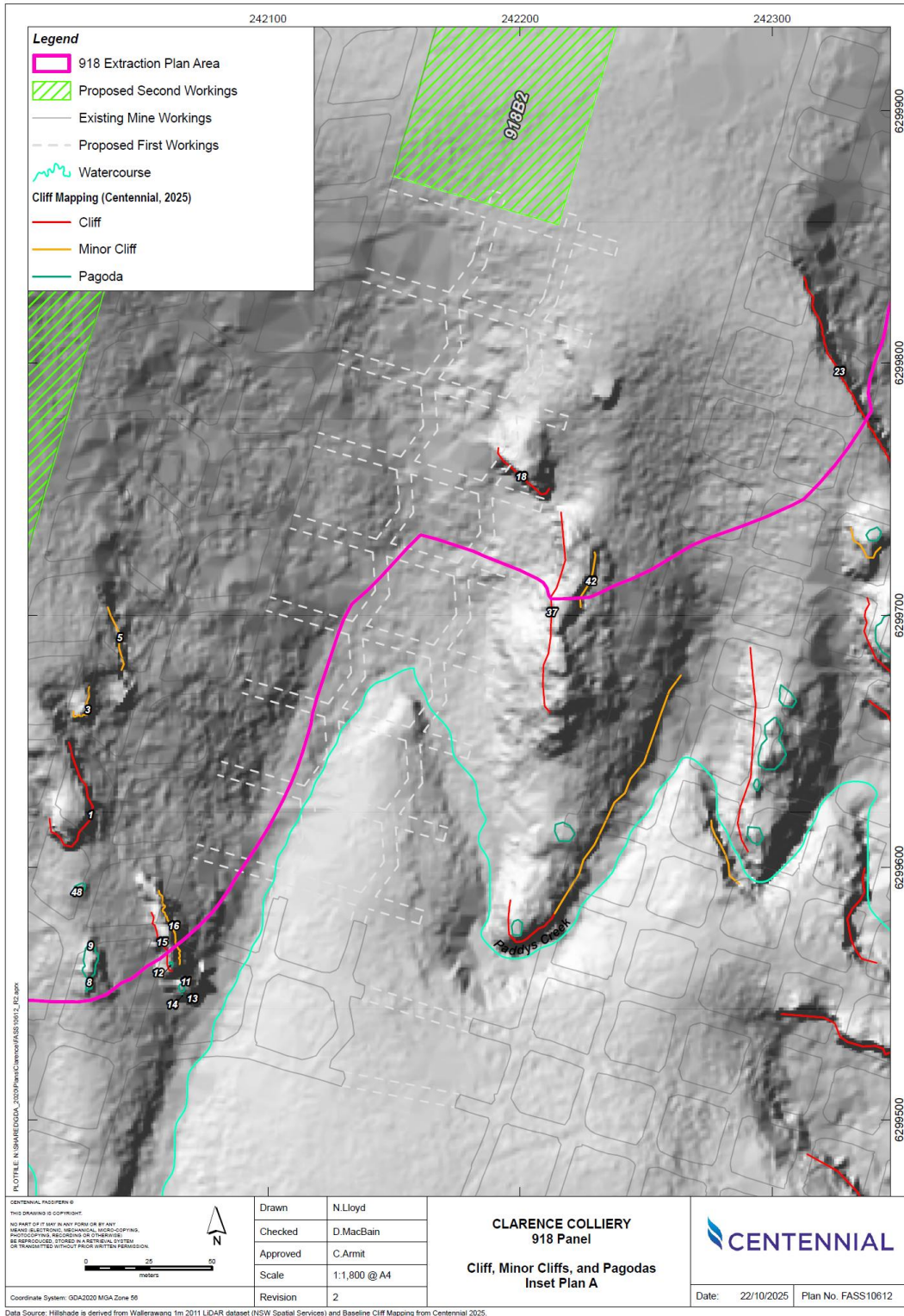


Figure 3 - Hillshade Analysis and mapped minor cliffs, cliffs and pagodas – Inset A

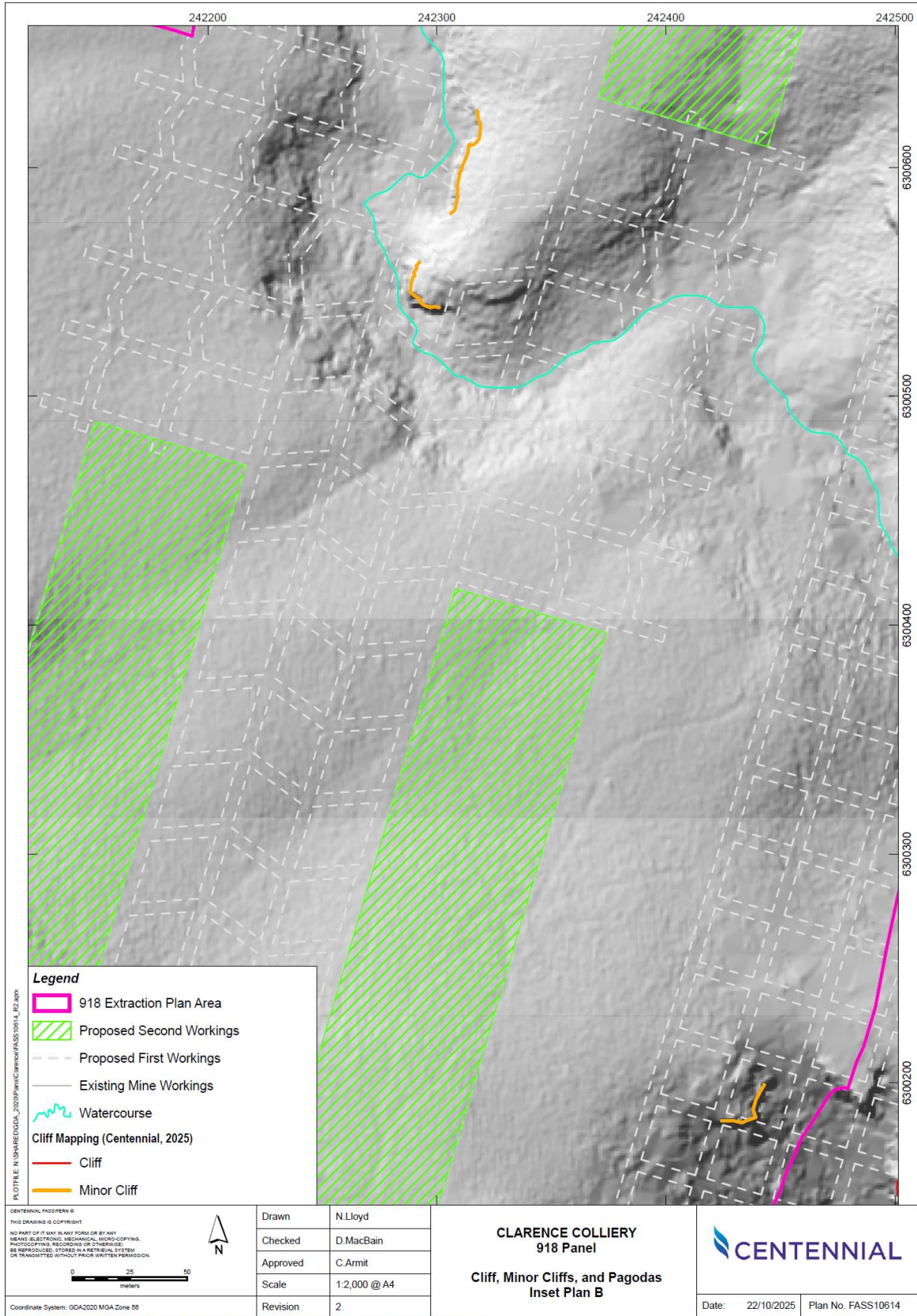


Figure 4 - Hillshade Analysis and mapped minor cliffs, cliffs and pagodas – Inset B

Table 3 – Cliffs, Minor Cliffs and Pagodas identification

Slope Unique Identifier	Feature Type	Length (m)	Height (m)
C_01	Cliff	62	14
C_15	Cliff	27	16
C_18	Cliff	31	14
C_23	Cliff	100	18
C_37	Cliff	82	15
MC_03	Minor cliff	20	8
MC_05	Minor cliff	26	8
MC_16	Minor cliff	34	9
MC_25	Minor cliff	31	6
MC_32	Minor cliff	31	7
MC_33	Minor cliff	51	6
MC_42	Minor cliff	23	6
P_08	Pagoda	5	3
P_09	Pagoda	13	3
P_48	Pagoda	5	2

As presented above, cliff, minor cliffs and pagodas are located predominantly in the southern and western parts of the EP Area towards Bungleboori and Paddys Creeks. There are five cliffs, seven minor cliffs and three pagodas identified entirely within and partly within the EP Area.

6.1.2 Steep slopes

LiDAR data has been used to categorise and apportion the EP Area into four classes of slopes including:

- Gentle (slope gradients of less than 10 degrees (°));
- Moderate (slope gradients of between 10° to 18°);
- Steep (slope gradients of between 18° to 63.4°); and
- Very steep (slope gradients of greater than 63.4°, typical of pagoda, minor cliff and cliff features, depending on feature heights and lengths),

Significant areas of the EP Area are characterised by gentle slopes with 25% of the EP Area characterised by steep slopes (i.e. slopes with gradients of between 1:3 and 2:1). Table 4 presents a breakdown of slope gradient across the EP Area and Figure 5 presents the slope analysis in the context of the proposed 918 Panels.

Table 4 – Summary of Slopes within 918 EP Area

Slope Description	Grade (%)	Slope (°)	Slope (Rise:Run)	Area (ha)	Area (%)
Gentle	<18%	<10°	<1:6	32.0	36.6
Moderate	18% to 33%	10° to 18.3°	1:6 to 1:3	33.5	38.3
Steep	33% to 200%	18.3° to 63.4°	>1:3 to 2:1	21.9	25.0
Very steep / Cliff	>200%	>63.4°	>2:1	<0.1	<0.5
			Total	87.5	100.0

Figure 5 also presents the proposed quantitative monitoring as it relates to measuring subsidence performance across steep slopes and cliffs within the EP Area. Monitoring is discussed further in Section 10.

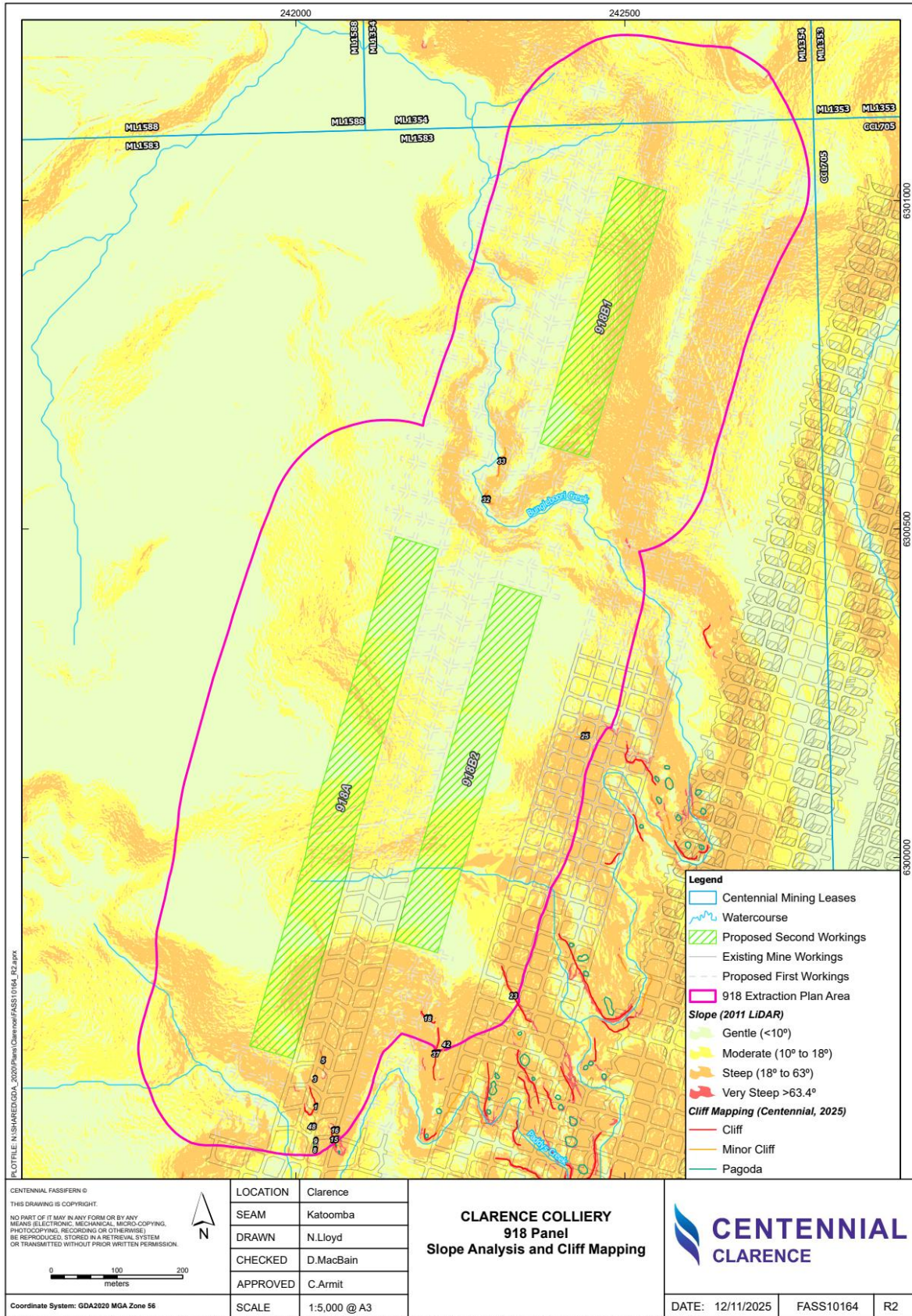


Figure 5 - Slope Analysis

6.1.3 Landform and other Land Resources

6.1.3.1 Topography

The EP Area landform is located within the Newnes Plateau and consists mainly (70%) of gentle (<10°) to moderate slopes (>10° to 18°). Steep slopes and cliffs are located within the southern and western areas around Bungleboori Creek and Paddys Creek (**Sections 6.1.2** and **6.1.1**). The local relief across the EP Area is 130 m with elevations ranging between 1014 m Australian Height Datum (AHD) in Paddys Creek to the south and 1144 m AHD to the north near the adjacent Mount Horne.

6.1.3.2 Drainage

The EP Area is located in the headwaters of the Bungleboori Creek catchment, where Paddys Creek crosses the south-eastern extent of the EP Area as a third order tributary, joining Bungleboori Creek to the east. The upper Bungleboori Creek catchment enters the northern portion of the EP Area, where Bungleboori Creek travels south as a third order watercourse to its confluence with Paddys Creek (third order stream) into the fourth order section of Bungleboori Creek, eventually draining into the Wollangambe River approximately 40 km downstream.

The northern half of the EP Area generally consists of gentle grades with some areas of steep slopes where tributaries associated with Bungleboori Creek and Paddys Creek pass over the proposed 918 Panels. The location of these drainage lines and associated creeks are presented in Figure 5 and, along with the swamps, are discussed in further detail within the 918 Panels Biodiversity Management Plan (RPS, 2026) and the 918 Panels Water Management Plan (GHD, 2026).

6.1.3.3 Geology

The local geological units present on the surface within the EP Area comprises the Burrellow Formation and the Banks Wall Sandstone. The Burrellow Formation is characterised by:

- medium to coarse grained, jointed and slightly to moderately weathered sandstone beds; and
- numerous siltstone, shale and claystone layers.

Approximately seven claystone layers have been defined in the Burrellow Formation (McHugh, 2014), of which the most persistent in the Clarence Colliery Holdings are the lowest, the YS5, YS5A and YS6; these collectively seem to correspond to the Wentworth Falls Claystone, which averages 10 m in thickness and defines the boundary between the Burrellow Formation and the underlying Banks Wall Sandstone.

The Banks Wall Sandstone is a weathered to fresh, moderately weak to very strong, medium to very coarse grained sandstone unit with siltstone and claystone bands.

The general stratigraphy at Clarence Colliery is presented in Figure 6.

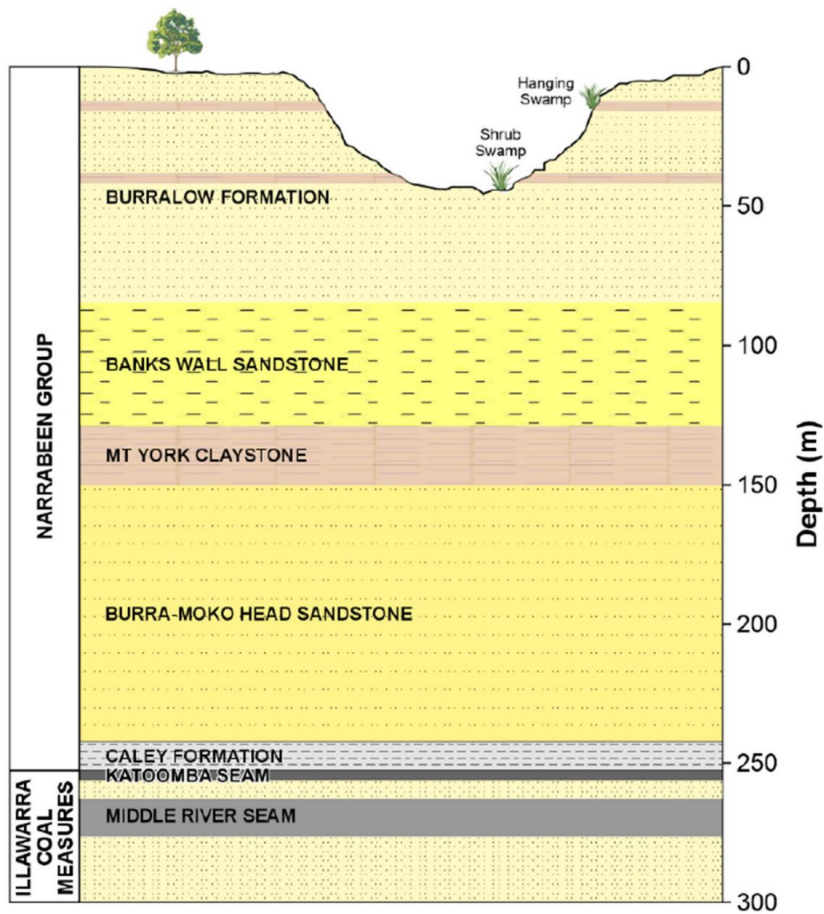


Figure 6 – Stratigraphy at Clarence Colliery (SCT,2026)

6.1.3.4 Soils

The main soil units found within the EP Area are the Wollangambe, Deanes Creek, Mount Sinai, Medlow Bath and Warragamba soil landscapes (DPIE, 2020). These units generally exhibit moderate to high erosivity and low fertility. The soil landscapes within the EP Area are further described in Table

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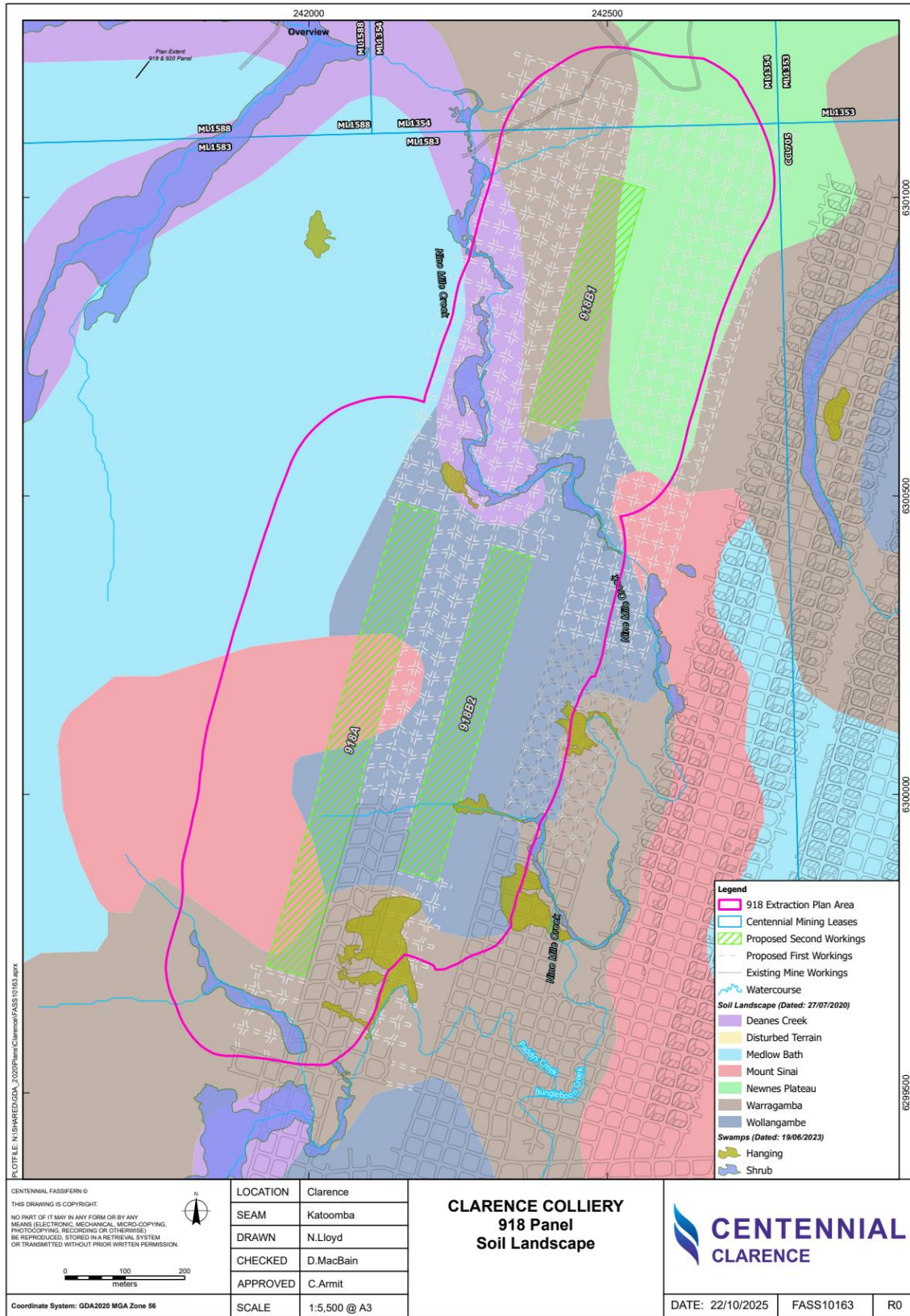


Figure 7.

Table 5 – Soil Landscapes within 918 Panel EP Area

Soil Landscape Unit	Age/Stratigraphy	Topography	Soils	Characteristics
Wollangambe (wo)	Triassic Age Narrabeen Group quartz sandstone and quartz-lithic sandstone interbedded with thin red, grey and green claystone, shale and occasional conglomerate and ironstone lenses.	Rounded crests and moderately to steeply inclined side slopes. Localised rock outcrop in the form of small benches, cliffs and low broken scarps (generally <25 m). Slopes are generally <35%.	wo1 - Single-grained loamy sand (topsoil) wo2—Red clayey sand (topsoil or subsoil) wo3- Bright yellowish brown clayey sand (topsoil and subsoil) wo4—Pedal light grey clay (subsoil)	Erosion: high to severe Fertility: Low pH: slightly acidic (6.5)
Deanes Creek (dc)	Triassic / Narrabeen Group Narrabeen Group Sandstones, in particular the Banks Wall Sandstone Member—friable sandstones, claystone and conglomerate. Swamp location may be related to either the occurrence of major fracture zones in the sandstones (Pecover 1984) or impermeable clay lenses in the Narrabeen Group Sandstones (Fairley and Moore 1989).	Level to gently inclined narrow, linear headwater valley swamps. Slope gradients are typically <5%. Gently convex in cross-section, the swamps maintain a permanent watertable about 60 cm below the soil surface which may rise to or above the surface during prolonged periods of wet weather.	dc1—Black organic rich sandy clay loam (topsoil) dc2—Greyish yellow brown sandy loam (subsoil or topsoil) dc3—Light grey sandy clay (subsoil) dc4—Bright yellowish brown coarse sand (subsoil)	Erosion: low, sedimentation sites Fertility: very low pH: strongly acidic (4.5)
Mount Sinai (ms)	Triassic / Narrabeen Group, particularly the Banks Wall Sandstone, Mount York Claystone and Burra-Moko Head Sandstone Members—quartz-lithic sandstones and quartz sandstone interbedded with thin red, grey and green claystone, shale and occasional conglomerate and ironstone lenses.	Narrow rocky convex crests and rolling to steep hills. Slopes are steep to moderately inclined with slope gradients typically more than 30%. Rock outcrop is abundant as sloping, platforms and occurs as a series of horizontal benches downslope. Pagoda or beehive shaped rock formations of alternating ironstone and sandstone layers are conspicuous.	ms1-light grey to dull yellow coarse sand(topsoil) ms2-brownish black loamy sand (topsoil) ms3- dull yellow orange loamy sand(subsoil) ms4-bright yellowish brown clayey sand (subsoil)	Erosion: moderate to severe Fertility: very low pH: moderately to slightly acidic (5.5-6.5)
Medlow Bath (mb)	Triassic / Narrabeen Group, particularly the Banks Wall Sandstone, Mount York Claystone and Burra-Moko Head Sandstone Members—quartz-lithic sandstones and quartz sandstone interbedded with thin red, grey and green claystone, shale and occasional conglomerate and ironstone lenses.	Gently undulating to rolling rises and low hills on sandstone plateau surfaces. Crests are broad (>50 m), rounded and convex. Sideslopes are gently undulating to rolling. Local relief is 20 – 50 m. Slope gradients range from 10 – 20%. Elevation is generally > 850 m. Rock outcrop is occasionally present on crests.	mb1—Loose black organic-rich sand (topsoil) mb2—Dark reddish brown earthy loamy sand (topsoil) mb3—Massive earthy yellowish brown clayey sand (subsoil) mb4—Friable sandstone (subsoil)	Erosion: moderate to highly Fertility: very low pH: moderately to strongly acidic (6.0-4.5)
Warragamba (wb)	Triassic / Narrabeen Group—fine-grained	The dominant landforms are moderate to very steep slopes.	wb1—Single-grained loamy sand (topsoil)	Erosion:

	<p>lithic sandstone occasionally interbedded with thin shale lenses.</p>	<p>Local relief is 50 – 150 m, slope gradients are >35%. Sloping narrow ridges 10 – 20 m wide. Narrow sandstone and colluvial benches occur on the slopes which contain sandstone boulders. Small cliffs and scarps on some steeper slopes. Narrow boulder filled drainage lines are typical on slopes.</p>	<p>wb2—Very dark reddish brown clayey sand (topsoil) wb3—Pedal clay (subsoil)</p>	<p>Fertility: low to moderate pH: strongly to slightly acidic (4.5-6.0)</p>
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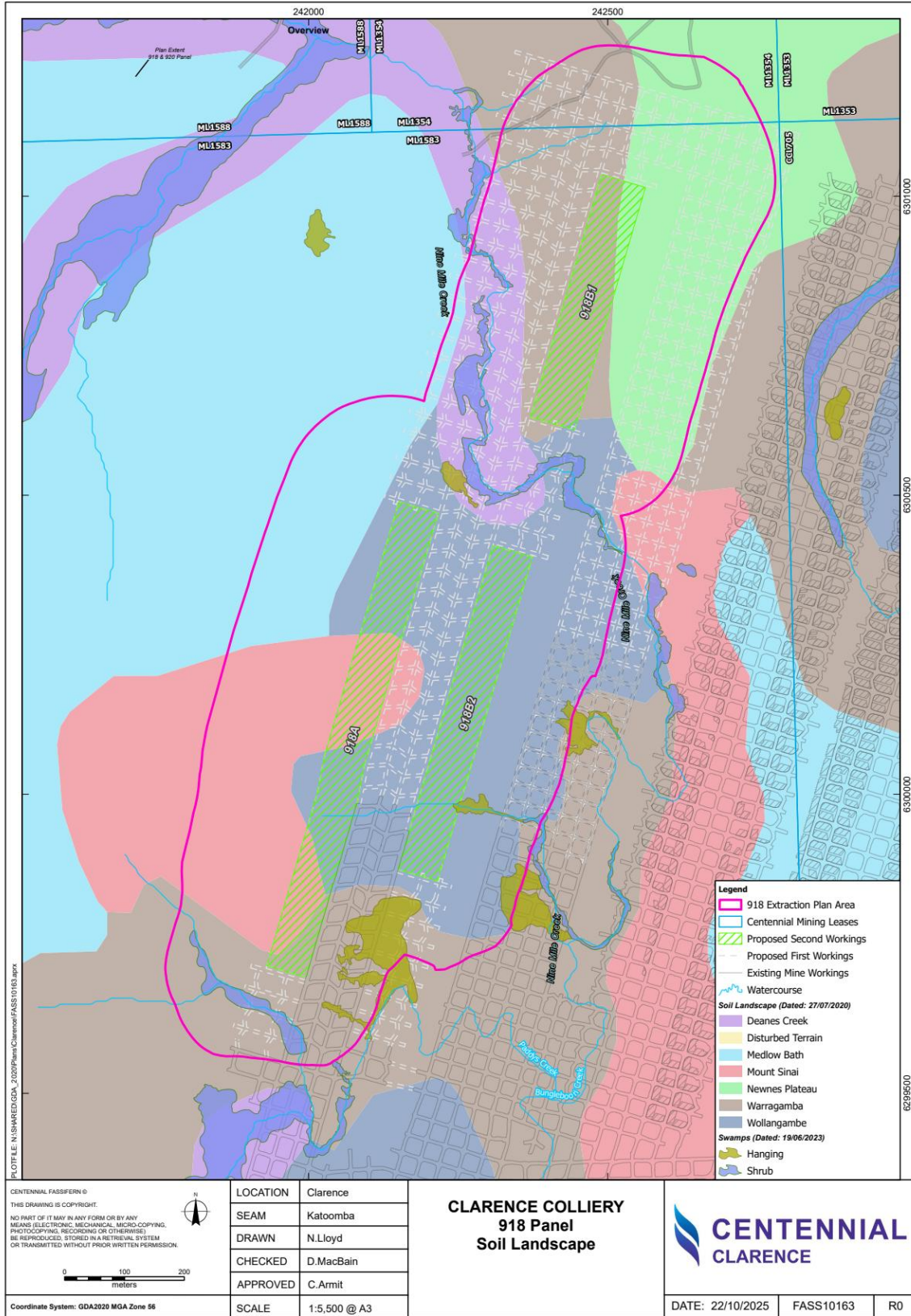


Figure 7 - Soil Landscape units

6.1.3.5 Land and Soil Capability Classification

The Land and Soil Capability (LSC) classification applied to the EP Area was in accordance with the OEH guideline *The Land and Soil Capability Assessment Scheme; Second Approximation* (OEH 2012). This scheme uses the biophysical features of the land and soil to derive detailed rating tables for a range of land and soil hazards. The scheme consists of eight classes, which classify the land based on the severity of long-term limitations. The LSC classes are described in Table 6 and their definition has been based on two considerations:

- The biophysical features of the land to derive the LSC classes associated with various hazards.
- The management of the hazards including the level of inputs, expertise and investment required to manage the land sustainably.

Table 6 – Land and Soil Capability (OEH,2012)

Class	Land and Soil Capability
Land capable of a wide variety of land uses (cropping, grazing, horticulture, forestry, conservation)	
1	Extremely high capability land: Land has no limitations. No special land management practices required. Land capable of all rural land uses and land management practices.
2	Very high capability land: Land has slight limitations. These can be managed by readily available, easily implemented management practices. Land is capable of most land uses and land management practices, including intensive cropping with cultivation.
3	High capability land: Land has moderate limitations and is capable of sustaining high-impact land uses, such as cropping with cultivation, using more intensive, readily available and widely accepted management practices. However, careful management of limitations is required for cropping and intensive grazing to avoid land and environmental degradation.
Land capable of a variety of land uses (cropping with restricted cultivation, pasture cropping, grazing, some horticulture, forestry, nature conservation)	
4	Moderate capability land: Land has moderate to high limitations for high-impact land uses. Will restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology.
5	Moderate–low capability land: Land has high limitations for high-impact land uses. Will largely restrict land use to grazing, some horticulture (orchards), forestry and nature conservation. The limitations need to be carefully managed to prevent long-term degradation.
Land capable for a limited set of land uses (grazing, forestry and nature conservation, some horticulture)	
6	Low capability land: Land has very high limitations for high-impact land uses. Land use restricted to low-impact land uses such as grazing, forestry and nature conservation. Careful management of limitations is required to prevent severe land and environmental degradation.
Land generally incapable of agricultural land use (selective forestry and nature conservation)	
7	Very low capability land: Land has severe limitations that restrict most land uses and generally cannot be overcome. On-site and off-site impacts of land management practices can be extremely severe if limitations not managed. There should be minimal disturbance of native vegetation.
8	Extremely low capability land: Limitations are so severe that the land is incapable of sustaining any land use apart from nature conservation. There should be no disturbance of native vegetation.

The EP Area has been classified into LSC Classes 4, 6 and 8 within the study area respectively, as shown in Figure 8.

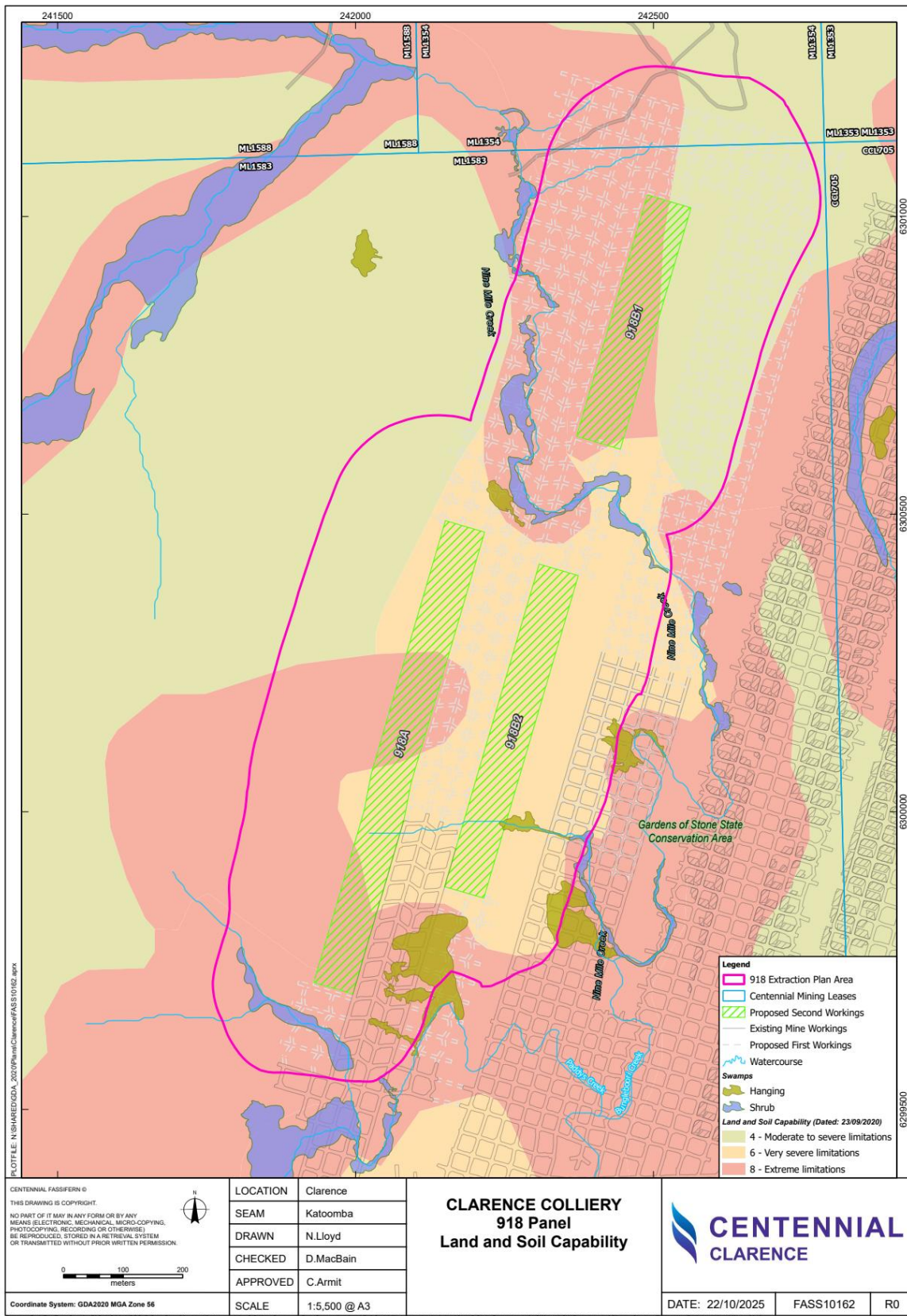


Figure 8 - Land and Soil Capability

6.1.4 Land use

The surface land use has changed from Forestry to Environmental Conservation during the development of the draft 918 and 920 Panels LMP. Initial consultation on the Extraction Plan was with Forestry NSW as the land managers of the Newnes State Forest. This surface land use change occurred in 2022 and the EP Area is now located within the GoS SCA, which is managed by NPWS. A Plan of Management for the GoS SCA (DPE, 2022) was developed and published. Within that Plan of Management the GoS SCA is described as an area of outstanding natural and cultural value. It protects ancient sandstone pagodas, rich eucalypt forests, an array of threatened species and important Wiradjuri cultural heritage. It is also noted to be an outstanding destination that will attract visitors and support the continued growth of the Lithgow region's economy.

The classification of the area as a SCA requires it to be managed in accordance with the management principles under the NPW Act for SCAs. These principles require the land to be managed for conservation and public appreciation and enjoyment, while also enabling the continued operation of existing mining infrastructure within the SCA and the continuation of economically important coal mining operations beneath the SCA (DPE, 2022).

There are a number of historical 4WD tracks and motor bike trails traversing the EP Area. These tracks are managed by NPWS and a program of track closure and rehabilitation is currently underway. NPWS is in the process of planning for and establishing recreational facilities within the SCA. This will include the establishment of camping areas, toilets, information shelters, lookouts, fireplaces and walking and cycling tracks (DPE, 2022). The SCA will offer opportunities for a range of formal multi day walking tracks, sightseeing, rock climbing, canyoning, sustainable four wheel driving, mountain biking and bushwalking. The location of these proposed facilities may or may not traverse the EP Area, however, this LMP acknowledges the potential for any one of the above mentioned facilities to be located within the EP Area and therefore, mining activities must be carried out such that they result in minimal subsidence.

7 Subsidence Assessment

7.1 Mine Design

Mine design is the primary control utilised at Clarence for subsidence and impact avoidance. Void and pillar widths have been designed to support the overburden and limit spans with minimal subsidence effects at the surface. The final pillars left following sub-panel extraction are specifically designed to result in minimal ground movement and no expected surface cracking.

Mining panels at Clarence are designed to provide reduced levels of subsidence by using sub-critical extraction spans and stable pillars designed to control vertical subsidence to less than 100 mm.

The main mine design dimensions of the panels include:

- 75 m sub-panel void widths (i.e. the combined first workings roadway and second workings) for 918A and 918B2 and 83m sub-panel void width for 918B1;
- A set of three spine pillars (918 Panel) with a combined width of between 84 m to 90 m; and
- Inter-panel solid barrier pillar between the adjacent 900 Panel and sub-panels 918B2 and 918B1 ranges between of 66 m to 74 m wide.

This design aims to minimise the impacts to the features managed by this plan.

7.2 Subsidence Prediction

SCT (2026) has provided two-dimensional, vertical subsidence prediction profiles using numerical modelling methods, based on the site-specific geotechnical characteristics of the proposed 918 Panel layout and overburden.

SCT (2026) developed and validated its numerical model primarily on observations during the extraction of Panels 910 to 906, which are located to the east of the proposed 918 Panel.

Whilst Clarence has yet to conduct panel-and-pillar partial extraction using the shortwall mining method, there are nearby examples of secondary extraction of Panels 910 to 906, which have mining geometries and extraction ratios that are similar to the proposed 918 sub-panels. A key difference, however, is that the spine pillar between Panels 918A and 918B2 is 84 to 90 metres in width, which is substantially greater than the pillar widths between Panels 910 to 906 (56 to 60 metres).

The Incremental Profile Method (IPM) has been used by MSEC (2026) to prepare three-dimensional predicted subsidence contours for the 918A, 918B1 and 918B2 sub-panels based on the predicted two-dimensional subsidence profiles determined by SCT (2026).

Subsidence profiles were developed to reasonably match the shape of SCT's predicted subsidence profiles at depths of cover of 180 m and 280 m. The IPM model adjusts the profiles within the EP Area based on actual depths of cover and seam thickness, interpolating between the two profiles at 180 m and 280 m. The subsidence profiles were adjusted to achieve an angle of draw of approximately 35° following a review of available subsidence monitoring data along the 900B and 900D Lines during and after the extraction of Panels 910 to 906.

A summary of the maximum predicted values of total vertical subsidence and tilt derived using the IPM is provided in Table 7. The total values are the accumulated movements after the extraction of each sub-panel.

Table 7– Maximum predicted total vertical subsidence and tilt after extraction of each sub-panels

After Panel	Maximum predicted total vertical subsidence (mm)	Maximum predicted total tilt (mm/m)
918A	50	0.5
918B1	60	0.6
918B2	76	0.6

SCT (2026) advises that a variance of ± 20 mm is to be applied to its modelled maximum subsidence estimates.

MSEC (2026) has carried out a statistical analysis of ground monitoring data to assist with the prediction of strains including the potential for irregular or anomalous movements. The range of potential strains has been determined using monitoring data from the NSW coalfields where the maximum measured vertical subsidence was less than 100 mm, as for the proposed 918 Panel.

The dataset contains 5000 available measurements of strains above partial or total extraction areas where the maximum measured vertical subsidence was less than 100 mm. The majority (approximately 95 %) of the measured strains were in the order of survey tolerance, taken as 0.3 mm/m. The 95th percentiles therefore are approximately 0.3 mm/m tensile and compressive.

The maximum predicted strains for 918 Panel have therefore been taken as 0.3 mm/m tensile and compressive. While strains greater than 0.3 mm/m can occur, the rate of occurrence is expected to be approximately 5 %.

Non-conventional ground movements may occur within the Study Area due to near surface geological conditions, steep topography and valley-related effects. Numerical modelling by SCT (2026) suggests that the ground surface will experience closure of approximately 70 to 75 mm across the width of Panel 918. Whilst the ground surface may experience closure across Panel 918, it is unlikely that closure will concentrate within a valley to a magnitude that results in adverse impacts.

MSEC (2026) advise that the potential for non-conventional movements is considered to be very low due to the low levels of subsidence that are predicted to occur. The natural and built features are predicted to experience low levels of vertical subsidence and horizontal movements. The corresponding curvatures and strains are expected to be in the order of survey tolerance, i.e. not measurable. Adverse physical impacts to the natural and built features are not expected due to the extraction of the proposed sub-panels. Impacts have not been observed at similar surface features above the existing panels at Clarence, where the predicted vertical subsidence was up to approximately 100 mm i.e., higher than predicted for the proposed extraction of the 918 sub-panels.

The predicted subsidence is not expected to cause adverse impacts on the relevant features covered under this LMP. The magnitude of subsidence predicted, including tilts and strains, are too small to induce surface cracking or slope instability.

8 Performance

The MSEC subsidence assessment concluded negligible mining-related impacts to cliffs or associated features are expected as a result of the 918 Panel extraction.

There are two primary aspects to manage subsidence performance including:

- Mine design to avoid impacts
 - The primary management strategy being implemented is impact avoidance through the implementation of a conservative mine design. Mining methods that limit void widths and extraction ratios are designed to leave sufficiently large and long term stable final pillars, resulting in minimal subsidence effects and prevent impacts, and
- Monitoring and management measures
 - Monitoring to ensure mine design is implemented as designed through underground mining controls and monitoring of key landscape features for changes (particularly steep slopes, minor cliffs, cliffs and pagodas) will be undertaken to confirm that the mine design measures to limit subsidence are adequate, remaining within the consent limit,
 - Establishing a monitor, measure, review process to allow for adaptive management on a sub panel by sub-panel basis.

To establish compliance with the performance measures, Clarence has developed a monitoring program in consultation with the affected landowners. TARPs have also been established and provided in Appendix 2. These documents establish the appropriate subsidence monitoring, parameters and associated trigger levels to demonstrate that subsidence performance satisfies the subsidence performance measures set out in DA 504-00.

8.1.1 Performance Measures

The LMP aims to ensure the performance measures presented in Table 8 are achieved and not exceeded.

Table 8-Performance Measures

Land	Performance Measure
Land in general; steep slopes, cliffs, minor cliffs, pagodas	Negligible subsidence impact or environmental consequences.

As the above performance measures have potential to impact the public and the natural environment there are corresponding performance measures set out in the 918 Public Safety Management Plan and other component management plans supporting the Extraction Plan.

8.1.2 Performance Indicators

To establish compliance with the performance measures presented above, Centennial has established a subsidence and environmental monitoring program developed in consultation with the affected stakeholders including TARPs, that inform an Adaptive Management Procedure.

Subsidence predictions are less than the approved subsidence impact assessment criteria set out in Schedule 3, condition 1 of DA 504-00.

presents both the approved subsidence levels and the maximum predicted subsidence levels as a result of the extraction of the 918 Panel.

Table 9- Performance Indicators

	Vertical Subsidence	Tilts	Strains (Compressive and Tensile)
DA 504-00 (impact assessment criteria)	100 mm	3 mm/m	2 mm/m
SCT/MSEC – Max predicted	76mm	0.6 mm/m	0.3 mm/m

At the very low levels of subsidence presented in environmental consequences are expected to be negligible and imperceptible and performance measures are expected to be met. This is consistent with the historic experience at Clarence where partial extraction activities have taken place.

Performance Indicators have been established for each feature. The TARPS provide the trigger values as outlined in Table 10.

Table 10 – TARP Philosophy

Performance Indicator	Trigger	Action / Response
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Level 1 Low	Operations within prediction and approved impact.	Continued operations and monitoring as normal.
Level 2 Medium	Operations within approved impacts but exceed or potentially exceed predictions.	Review and investigation processes are engaged, with adaptive management as required.
Level 3 High	Operations exceed approved impact. The approved Performance Measures of Development Consent DA 504-00, other relevant approvals or adopted performance measures	Adaptive Management fully engaged

9 Risk Management

All operational processes undertaken at the Clarence operations are subject to the risk assessment process prior to implementation. The process for risk and change management is undertaken according to the methodology and tools contained within **Risk Management Arrangements** and **Change Management System**.

Clarence has completed a Workplace Risk Assessment and Control (**WRAC**) Risk Assessment for the impact of subsidence from the 918 Panel on natural environmental features including land, steep slopes, minor cliffs, cliffs and pagodas. Risks were identified and assessed through the review of known surface and sub-surface features within the EP Area. The risk assessment also specifically assessed key aspects required by the Managing Risks of subsidence Guideline (RR, 2026). A risk rating (low, moderate, significant, high or extreme) was assigned to each risk/hazard in consideration of the maximum reasonable consequence for the given controls.

9.1 Identified Risks and Risk Ranking

The potential hazards to public safety and the natural environment from the development of mine subsidence in the EP Area included:

- For cliffs, minor pagodas, steep slopes and gorges considering the following hazards impacting the environment, public safety and built features;
 - Potential for surface cracking, strain, tilting leading to rock fall, landslide, and slope instability

The risk assessment determined that the risk ranking of these impacts on landscape features is (noting the conservative, low impact mine design resulting in subsidence not exceeding 100 mm):

- Low - including aspects associated with cliffs, pagodas and steep slopes;

Based on the low-level predicted subsidence effects and the observations of cliffs located above previous mining at Clarence, it is considered unlikely that the cliffs, minor cliffs or pagodas within the Study Area would experience adverse impacts due to the extraction of the proposed 918A, 918B1 and 918B2 subpanels (MSEC, 2026).

10 Monitoring

The 918 Panel Subsidence Monitoring Program consists of conventional subsidence monitoring, Global Navigation Satellite System (**GNSS**) units continuously monitoring x, y, z position, visual inspections, underground surveys and environmental monitoring, in order to:

- Demonstrate second workings are undertaken as per approval;
- Monitor subsidence performance and compare results to predictions;
- Review and calibrate subsidence and geotechnical models;
- monitor far field subsidence movements;
- Provide information to demonstrate statutory compliance and obligations are satisfied;
- Targeted monitoring of sensitive surface features;
- Meet stakeholder monitoring requirements to minimise impact to infrastructure;
- Provide appropriate and timely subsidence information to assess against triggers established in the TARPs;
- Provide appropriate and timely data to assess against triggers with sufficient time to implement contingency measures and adaptive management if required; and
- Provide data for future monitoring systems for ongoing mining within Clarence mining leases.

The monitoring will be established and undertaken with the permission and in consultation with the NPWS.

The monitoring commitments set out within this LMP is scheduled in the Centennial Compliance Database or the Clarence Work Order System. These systems allow for monitoring tasks to be scheduled on time intervals or mine production/face positions. The required actions are assigned to the relevant roles to ensure the subsidence monitoring program is achieved.

Table presents a summary of the proposed monitoring program associated with the landscape features (Figure 5) within the EP Area.

Table 11-Monitoring Program Summary

Feature and Relevant Management Plan	Location	Monitoring Method	Parameter	Frequency/Duration
Steep slopes and Cliffs 918 Panel Land Management Plan 918 Panel Public Safety Management Plan	Steep slopes, Cliffs, minor cliffs and Pagodas within EP Area	Visual Inspections Photographic Monitoring	Presence of mine-induced damage – surface cracking and rock falls, damage to tracks and drainage	<u>Baseline</u> Prior to mining 918A, 918B1 and 918B2 sub-panels <u>Post Mining</u> Visual inspection / photo monitoring of rock feature within three months post extraction of each sub-panel and then Annually for 3 years after post extraction for each sub-panel

10.1.1 Conventional Subsidence Monitoring

Clarence has a well-established conventional subsidence line monitoring program, with many kilometres of crosslines and centrelines established over those areas subject to mining activities within the Colliery Holdings. The monitoring lines are usually spaced at approximately 10 to 20 m intervals and typically consist of feno markers (with plastic covers).

Within the EP Area, two crosslines have been established:

- Crossline 900F – located adjacent to the unsealed track extending across the 918A and 918B2;
- Crossline 900H – located across Bungleboori Creek extending across the 918B1 sub-panel and will be extended and established over the adjacent 900 Panel prior to the development and extraction of the 918B1 sub-panel

This monitoring will measure subsidence performance compliance where the monitoring is situated and reconcile mine design performance for future second workings. The 900H and 900F lines will traverse representative areas of steep slopes. Given the magnitude of subsidence predicted (< 100 mm), this is considered representative and adequate.

10.1.2 Cliff and Pagoda monitoring

A pre-mining walkover inspection of the steep slopes and cliffs was undertaken by Centennial to inform the subsidence predictions and impact assessment report. A further desktop review and pre-mining inspection of the steep slopes, pagodas, minor cliffs and cliffs for the more generally accepted steep landform feature definitions were undertaken between 2022 to 2025.

Post mining visual inspections and photographic monitoring will be conducted after the extraction of each sub-panel, for the features located above that sub-panel and/or adjacent first workings and barriers. The photographic monitoring will include a catalogue of pre and post mining photographs of each cliff and pagoda feature associated with the applicable sub-panel.

The results of the post mining inspections will be included in an End of Sub-panel Report as described within the 918 Panel Subsidence Monitoring Program.

10.1.3 GNSS

Fourteen GNSS units, also known as Continually Operating Reference Stations (CORS), have been installed within the EP Area to continuously monitor x, y, z position (

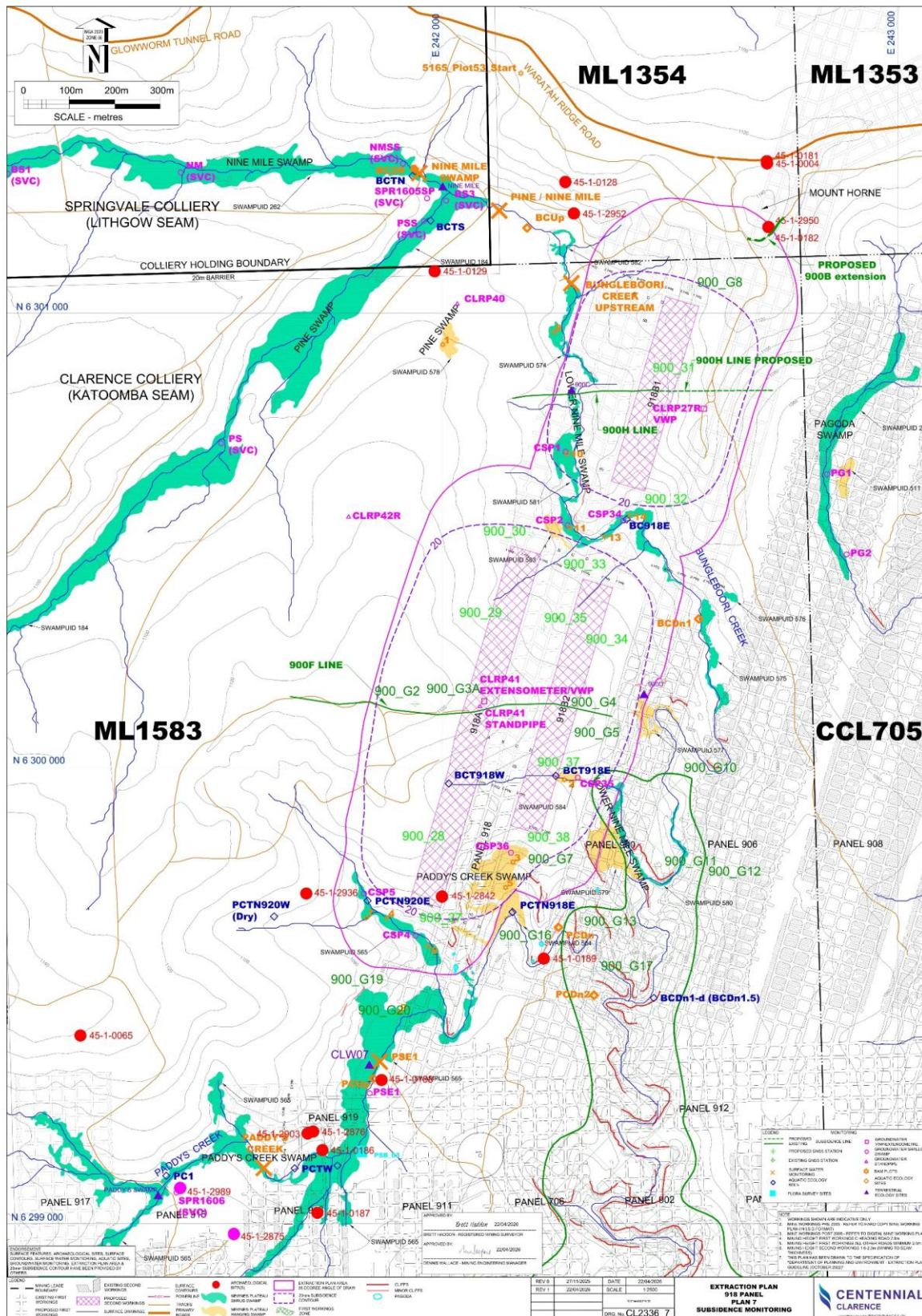


Figure 9). One GNSS unit (900_G7) is located adjacent to cliff No. 18. This feature straddles the 918B panel and the barrier pillar. Two GNSS units, 900_G8 and 900_G5, are located in an area classified as steep slope. An adjacent ground survey mark will be installed at each GNSS unit to provide a backup monitoring point in the event that the GNSS unit and/or the mounting post is damaged by vandalism, bushfire or other reasons and to allow continued subsidence monitoring past the cessation of the GNSS units post mining.

There are a further nine GNSS units/survey marks installed outside the EP Area. These survey sites are located mainly for far field and unconventional subsidence monitoring and will provide baseline for

future extraction plans and second workings mining

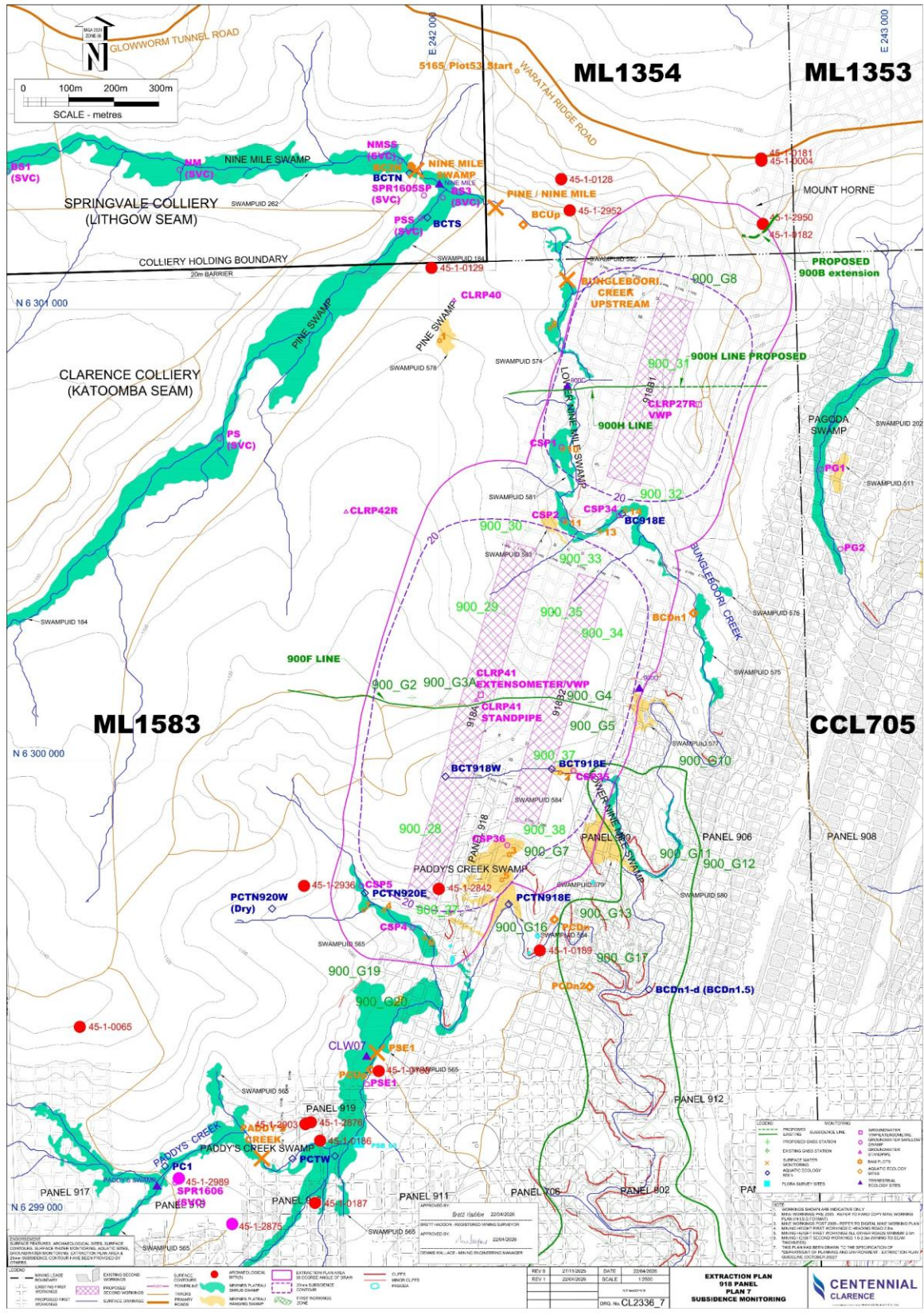


Figure 9). They are located to measure any subsidence movements on or near cliffs as well as measure far field non-conventional subsidence movements should it occur and gather baseline data for future Extraction Plans.

10.1.4 Surface walkover inspections

In addition to the cliff and pagoda photo monitoring, surface walkover inspections will also be undertaken when and where required under the TARP and where safe and readily accessible (such as where 4WD tracks traverse the EP Area and dependent on GoS SCA entry permissions). These inspections will be photo recorded and will follow the procedures set out in the 918 Panel Subsidence Monitoring Program.

Additional walkover inspections will be guided wherever possible by related information provided by the subsidence and environmental monitoring and inspections to identify and target key areas required for further inspection.

Opportunistic walkover inspections and observations will be undertaken by mine personnel and contractors during routine monitoring visits within the EP Area (e.g., conventional surveys, GNSS maintenance visits, surface extensometer downloads, biodiversity surveys, surface and groundwater water monitoring). Considering the person hours involved in the above mentioned monitoring program, there will be significant opportunity to extensively inspect the EP Area, both pre and post mining.

The 918 Panel Subsidence Monitoring Program also sets out additional and scheduled photographic monitoring (MSEC, 2026). The details of this monitoring program are not replicated herein, as the inspections are more general in nature and not specifically targeting cliffs, minor cliffs, pagodas, or steep slopes.

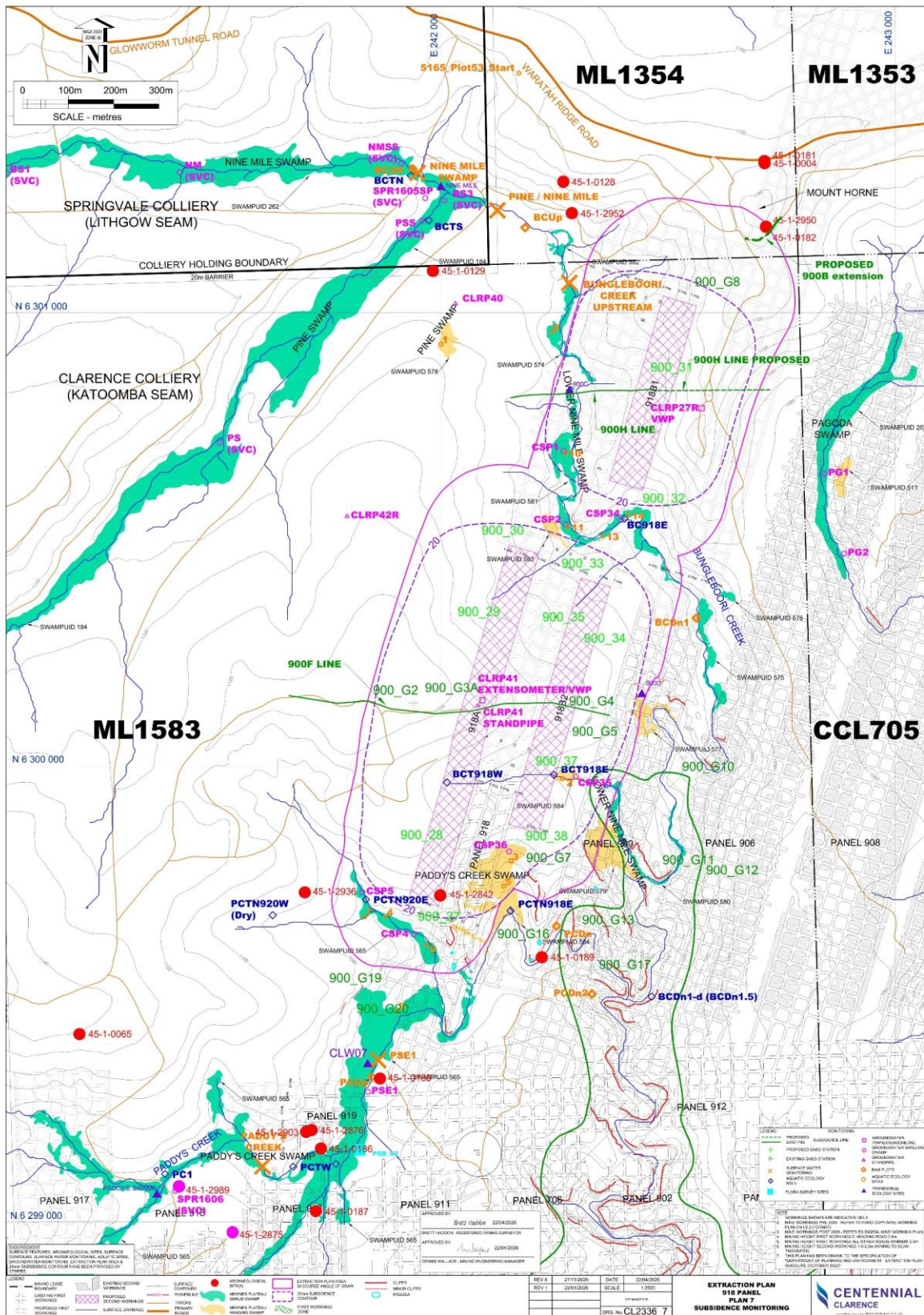


Figure 9 - Subsidence Monitoring

11 Adaptive Management and Staged Implementation

Adaptive Management Strategy

In addition to the conservative narrow sub-panel widths and wide spine and barrier pillar widths, which were specifically designed to provide reduced levels of subsidence and impact, Clarence has developed an adaptive management approach in accordance with Condition 2(g)(ix) of Development Consent DA504-00, which requires a **“Contingency Plan that expressly provides for:**

- *adaptive management where monitoring indicates that there has been an exceedance of any impact assessment criteria in Table 1 or condition 5, 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.”*

Table 1 refers to the Subsidence Impact Assessment Criteria, which are described in Section 0. DA504-00 Schedule 3 Condition 5 refers to Water Resources Impact Assessment Criteria, which are monitored and managed in accordance with Clarence’s Water Management Plan (GHD, 2022)

The Adaptive Management Strategy includes the following three steps:

1. Implementation of a detailed monitoring program to measure and record mining-induced ground movements and impacts on natural and built features during and after mining;
2. A review of relevant observations at appropriate stages, when:
 - a) mining of each sub-panel has progressed a sufficient distance such that the majority of mining-induced movements have occurred; and
 - b) there remains sufficient time to adjust the mine plan for future sub-panels without resulting in delays to mine production if required; and/or
 - c) monitoring results exceed the TARPs (Appendix 2)
3. A decision on whether to adjust the mine plan for future sub-panels to further reduce the potential for exceeding the conditions of approval of development consent DA504-00.

For clarity, changes to extraction void widths (and associated changes to barrier pillar widths) can be made prior to the extraction of each sub-panel, if required. It is difficult but possible to adjust extraction void widths mid extraction.

The process for assessing and determining if a change to the mine plan is required during or after the mining of an approved sub-panel is illustrated by the Adaptive Management Strategy (Figure 10).

In relation to Criteria A, Clarence will engage a subsidence expert to review and assess subsidence monitoring data and conduct Assessment 1. If Assessment 2 is required, Clarence will engage a subsidence expert to recalibrate the subsidence modelling/predictions and determine whether a change to the mine plan is likely to be effective in reducing likelihood of exceeding Criteria A.

As shown in Figure 10, the review will be conducted on at least two occasions: once during the extraction of sub-panel 918A and again during the extraction of sub-panel 918B1, prior to the commencement of the next sub-panel. In addition to the review, Clarence will not extract sub-panel 918B2 until approved by DPHI following a review of monitoring results for sub-panels 918A and 918B1. A review would also be conducted if monitoring results exceed the TARPs during the mining of sub-panels 918A, 918B1 and 918B2.

The findings of the review will be included in an Adaptive Management Report, which will be submitted to DPHI for review. The Adaptive Management Report can be a standalone report or be included as part of an End of Sub-Panel Report.

Staged Implementation

In addition to the Adaptive Management Strategy, Clarence Colliery supports a staged approval process for the 918 Panel Extraction Plan as aligned with the IEAPM's January's 2026 recommendations. The IEAPM have recommended to DPHI to consider a staged assessment approach whereby approval of 918A and 918B1 sub-panels are determined and, subject to satisfactory confirmation of subsidence predictions and pillar monitoring, then determine approval of 918B2 sub-panel and any associated conditions to meet the long-term subsidence performance measure of 100mm.

If the 918 Extraction Plan is approved, this will enable the initial mining of the single sided 918A, then 918B1 sub-panel, followed by a hold point prior to determination of approval of 918B2 sub-panel extraction.

After completion of mining of sub-panel 918A, and stabilisation of subsidence, a 918A End of Sub-panel Report will be prepared by a suitably qualified and experienced person and will incorporate environmental and subsidence monitoring data to validate subsidence performance within predictions, and confirm compliance within the applicable consent conditions. The 918A End of Sub-panel Report will provide a defined compliance and adaptive management checkpoint and inform whether any refinement to the adjacent 918B2 sub-panel design, e.g. reduction of void width or length, is required prior to 918B2 approval determination and extraction commencement. The 918A End of Sub-Panels Report will be submitted to the DPHI via the planning portal for assessment and determination.

An End of Sub-panel Report will also be prepared and submitted for 918B1 upon completion of mining, noting that as an individual extraction void, its performance will not significantly affect subsidence in the 918A/918B2 area.

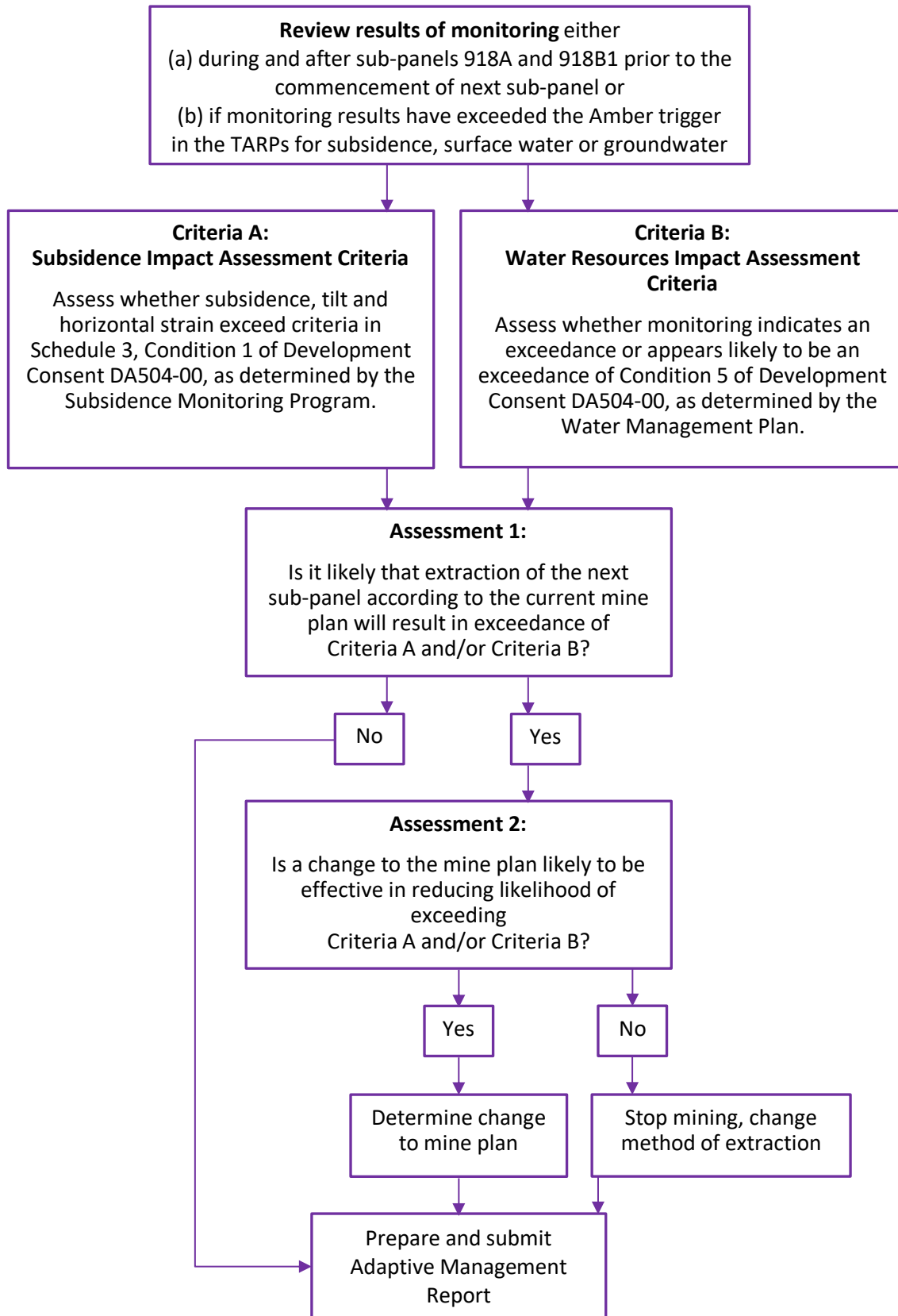


Figure 10 –Staged Implementation and Adaptive Management Strategy decision flowchart

12 Contingency Plans

Trigger Action Response Plans (TARP) have been developed using performance indicators for landscape features. In the event that subsidence monitoring and or visual inspections identify that a performance indicator has been exceeded, Clarence will implement the contingency measures as detailed in the TARP for the specific landscape feature (refer Appendix 2).

13 Roles and Responsibilities

The responsibility for implementation, monitoring and review of the LMP lies with the Technical Services Manager (TSM). The roles and responsibilities for the LMP are outlined in Table 12.

Table 12 -Roles and Responsibilities

Position	Responsibility
Mine Manager	<ul style="list-style-type: none"> • Authorisation of the LMP • Ensuring that sufficient resources are available to implement this plan • Approving changes to the mine design if required as a result of the Adaptive Management Procedure.
Technical Services Manager (TSM)	<p>Implementation, monitoring and review of this plan, including:</p> <ul style="list-style-type: none"> • Ensure that the Subsidence Monitoring Program required tasks are scheduled into the Centennial Compliance Database or Clarence Work Order System prior to the commencement of each panel • Ensuring subsidence monitoring and inspections are conducted at the required schedule and persons conducting monitoring/inspections are trained in the requirements of this plan • Consulting with the landowners and relevant government departments including NPWS, DPPI and RR • Review and assess the subsidence monitoring results against the performance measures • Notification of any exceedance of performance indicators in accordance with the TARPs and management plan • Preparation and submission of formal reporting requirements outlined in this plan • Enact and manage the Adaptive Management Procedure, including outcomes and recommendations, where required • Installation, maintenance and data management associated with the in-pillar instrumentation
Environment and Community Coordinator (ECC)	<ul style="list-style-type: none"> • Consulting with the landowners and relevant government departments including DPPI, RR and NPWS. • Notification of any exceedance of performance indicators in accordance with the TARPs and management plans • Undertake inspections in response to environmental contractor / public / landowner subsidence observations • Undertaking and/or co-ordinating cliff, minor cliff and pagoda inspections pre and post mining • Coordinating any remedial work as required • Regularly checking and reviewing monitoring data to detect early signs of a non-compliance and then reporting any non-compliances, including the potential for a non-compliance; • Prepare and submit and/or assist in the generation and submission of formal reporting requirements (including non-compliances and incidents);

	<ul style="list-style-type: none"> • Review and audit of the LMP • Preparation and submission of formal reporting requirements (in particular the Annual Review, Monitoring updates, and CCC) outlined in this plan
Mine Surveyor	<ul style="list-style-type: none"> • Establishment of subsidence monitoring in accordance with the Subsidence Monitoring Program • Ensure all subsidence lines are installed and surveys are conducted in accordance with the approved Subsidence Monitoring Program • Review and assess subsidence monitoring results • Notify the TSM and ECC of any identified anomalous results and/or public safety issues • Provide the monitoring results to the ECC and RR • Promptly notify the ECC and TSM of any issue identified during a subsidence inspection • Management of GNSS units and data management

14 Reporting

Reporting will be completed in accordance with the DPE (2022) Extraction Plan Guidelines as summarised in Table 13.

Table 13 - Reporting

Report	Trigger	Requirements	Stakeholders
Incident Reporting	Any occasion or incident in accordance with consent condition, WHS Regulations or TARP	In accordance with requirements of: <ul style="list-style-type: none"> • Development Consent Schedule 5 Condition 5A; or • WHS Regulation (Mines and Petroleum Sites) Part 7, s124; or • TARP. 	RR DPHI NPWS
Non-compliance Reporting	Any occasion or incident in accordance with consent condition	In accordance with requirements of: <ul style="list-style-type: none"> • Development Consent Schedule 5 Condition 5B 	
3 monthly Environmental monitoring Reporting	In accordance with DA504-00 Sch. 5 Condition 12	<ul style="list-style-type: none"> • (a) make a summary of the results of all monitoring required under this consent publicly available both at the mine and on the Applicant's website; and • (b) update these results on a regular basis (at least every 3 months) to the satisfaction of the Secretary 	Public
Subsidence Monitoring	Within 10 days of subsidence monitoring data collection	<ul style="list-style-type: none"> • Provide subsidence monitoring data as per RR requirements 	RR

Report	Trigger	Requirements	Stakeholders
End of Sub-panel Report	Within 1 week of the completion of each sub-panel	<p>Present a summary of the relevant Subsidence and environmental monitoring for the relevant sub-panel</p> <p>Provide a preliminary characterisation of any impact exceedances in accordance with the relevant TARP(s) and/or performance measures.</p> <p>Distinguish impact:</p> <ul style="list-style-type: none"> • Subsidence and environmental monitoring within or exceeding predictions; • those which exceed predictions but remain within performance measures and/or performance indicators; and • those which exceed performance measures and/or performance indicators. <p>Report to include:</p> <ul style="list-style-type: none"> • monitoring data analysis; • full description of any subsidence impacts that exceed predictions and/or performance measures; • location identification of unpredicted impacts using aerial photos with mine layout superimposed; • photos of the impact that exceeded predictions; • requirement to implement the Adaptive Management Procedure; and • mine design recommendations 	<p>RR</p> <p>DPHI</p> <p>NPWS</p>
Annual Review	Annual Report required under development consent DA-504-00	<p>Report to include:</p> <ul style="list-style-type: none"> • Reports of impacts and environmental monitoring results; • Monitoring results; and • Summary of subsidence impacts 	<p>RR</p> <p>DPHI</p> <p>CCC</p>
Community Consultative Committee (CCC)	CCC meetings are to be held twice per year	Subsidence and environmental performance is included as an agenda item at each meeting.	CCC

15 Audit and Review

Audit and review procedures are outlined in Centennial Clarence's Safety Management System that comply with the NSW Work Health and Safety (Mines and Petroleum Sites) Regulations. These procedures are utilised to manage audit and review functions of the Land Management Plan.

15.1 Audit

The requirements of the LMP are to be audited during its implementation to identify any issues that may affect its integrity and effectiveness and at least one month prior to a review so non-compliances and corrective actions can be identified during the review process.

Any non-conformances or deficiencies found during the audit are to be brought to the attention of the System Coordinator so that corrective actions can be outlined.

15.2 Review

The LMP will be reviewed in the event that one of the following occurs:

- Stakeholders raise issues that necessitates a review;
- Where unpredicted impacts or consequences have required implementation of contingency actions under this plan;
- Monitoring, incident or audit processes demonstrate a review is required;
- With each Extraction Plan;
- Where triggered by a level 3 (red) TARP;
- Where triggered by circumstances in WHS (Mines and Petroleum Sites) Regulation;
- Relevant changes are required as a result of the Adaptive Management Procedure;
- The End of Sub-panel Report identifies monitoring data exceeds predictions requiring a review of the mine design; or
- Change in mine design or layout.

16 Document Control

An integrated Document Control Procedure is incorporated into Centennial Clarence's Safety Management System (SMS). Documents, data and records pertaining to this plan will be managed according to the SMS.

17 REFERENCES

Centennial (2026a) *Clarence Colliery 918 Panel Built Features Management Plan*

Centennial (2026b) *Clarence Colliery 918 Panel Public Safety Management Plan*

Department of Planning, Industry and Environment (2020), *Soil Landscapes of Central and Eastern NSW - v2.1*, NSW Office of Environment and Heritage, Sydney

DPE (2022) *Gardens of Stone State Conservation Area: Plan of Management*

GHD (2022) *Clarence Colliery Water Management Plan*

GHD (2025) *918 Panel Geomorphology and Creek Stability Assessment*

GHD (2026) *918 Panel Water Management Plan*

McHugh, E. (2014). *The Geology of the Shrub Swamps within Angus Place, Springvale and the Springvale Mine Extension Project Areas*. E.A. McHugh Geological and Petrographic Services. Report to Centennial Coal

MSEC (2026a). *Clarence Colliery 918 Panel Subsidence Prediction and Impact Assessment*

MSEC (2026b) *Clarence Colliery 918 Panel Subsidence Monitoring Program*

NSW Department of Planning & Environment (2022). *Extraction Plan Guidelines*

OEH (2012) *The Land and Soil Capability Assessment Scheme; Second Approximation*

Resources Regulator (2026) *Managing Risk of Subsidence, Guide: WHS (Mines and Petroleum Sites) Legislation*

RPS (2026) *Clarence Colliery 918 Panel Biodiversity Management Plan*

RPS (2016) *Centennial Coal Western Regions Biodiversity Management Plan*

Strata Control Technologies (2026). *Geotechnical, Subsidence and Caving Assessment for 918 Panel Report No. CLR5894*

Umwelt (2026) *Clarence Colliery 918 Panel Heritage Management Plan*

Appendix 1 – Consultation

Summary of Consultation			
Stakeholder	Comments Requested (and date)	Comments Received (and date)	Comments / Issues Raised
<i>DPHI</i>	<i>26/2/2026 24/4/2026</i>	<i>None to date</i>	<i>Draft LMP Provided No comments or objections Final LMP submitted to DPHI on planning portal</i>
<i>RR</i>	<i>26/2/2026 24/4/2026</i>	<i>18/3/2026</i>	<i>Draft LMP Provided No comments or objections Final LMP submitted to DPHI on planning portal</i>
<i>NPWS</i>	<i>26/2/2026 24/4/2026</i>	<i>17/4/2026</i>	<i>Draft LMP Provided No further comments received specific to the LMP. Final LMP submitted to DPHI on planning portal</i>

Appendix 2 – Trigger Action Response Plan

Aspect	Performance Criterion Consent Criteria / EIS or EP Commitments	Condition Green (Operations within Predictions & Approved Impacts)	Condition Amber (Operations within Approved Impact Performance Measures but potentially exceeding predictions/designs)	Condition Red (Operations Exceed Approved Impact Performance Measures)
		<i>Continue Operations/Monitoring as Normal</i>	<i>Review Processes & Adaptive Management as Required</i>	<i>Adaptive Management Process Fully Engaged</i>
Land Steep slopes, cliffs and pagodas	<i>Negligible subsidence impacts - no surface cracking, collapse of features or slope failure due to mining</i>	<p>TRIGGERS:</p> <ul style="list-style-type: none"> ○ Subsidence monitoring and results from surface inspections remains compliant within condition green triggers for ground movements and effects, and does not identify any mining induced impacts from extraction within the EP Area, including: <ul style="list-style-type: none"> ○ No Damage to steep slopes and cliffs (including visible cracking, rock fall). ○ No Damage to cliff faces (e.g. no rock fall, cracking). ○ Underground Mining Controls and monitoring indicates all parameters are within design criteria / Level Green trigger levels. 	<p>TRIGGERS:</p> <p>Level A: Surface impacts are not yet observed but monitoring indicates potential to occur:</p> <ul style="list-style-type: none"> ● Subsidence monitoring indicates potential for surface impact requiring further investigation (i.e., Condition Amber triggered for <i>Ground Movements and Subsidence Effects Monitoring</i> and/or <i>Underground Mining Control</i>) ● Subsidence monitoring indicates potential for development of subsidence which may result in a failure of ground (<i>High Potential Incidents</i> as per Part 7, s124(5m) of the WHS(M&PS) Regulations 2022) <p>Level B: Surface impacts are observed:</p> <ul style="list-style-type: none"> ● Impact observed but yet to be confirmed if mining induced or natural causes ● The following mining-induced impacts occur but are within approved impact criteria of development consent DA504-00 (i.e. still below Condition Red): ● Any of the following events occurs that would have been a dangerous incident if a person were reasonably in the vicinity at the time when the event occurred (<i>High Potential Incidents</i> as per Part 7, s124(5a) of the WHS(M&PS) Regulations 2022). Part 15 s190: <ul style="list-style-type: none"> p) a failure of ground, or of slope stability control measures q) rock falls, instability of cliffs, steep slopes or natural dams, occurrence of sinkholes, development of surface cracking or deformations due to subsidence 	<p>TRIGGERS:</p> <ul style="list-style-type: none"> ● Subsidence monitoring and results from surface inspections identifies that there are mining induced surface impacts exceeding the Performance Measures which cause or threaten material harm to the environment or safety of persons on the surface over the mining area <p>Impacts Exceeding Performance Measures</p> <ul style="list-style-type: none"> ○ Cliffs and steep slopes: subsidence impacts due to mining to the above features which exceed negligible impacts, e.g. rock falls, displacement or dislodgment of boulders or slabs, fracturing or collapse of steep slopes, cliffs and pagodas) <p>Other Relevant Impacts:</p> <ul style="list-style-type: none"> ○ Failure of ground/slope stability control measures occurs (including landslips) ○ Mining-induced instability of cliffs, steep slopes occurs ○ Development of surface cracking or deformations which present potential risk to the public/others (i.e., where trip hazards / step formation occurs or where there is potential for instability of a rock formation)

Aspect	Performance Criterion Consent Criteria / EIS or EP Commitments	Condition Green (Operations within Predictions & Approved Impacts)	Condition Amber (Operations within Approved Impact Performance Measures but potentially exceeding predictions/designs)	Condition Red (Operations Exceed Approved Impact Performance Measures)
		<i>Continue Operations/Monitoring as Normal</i>	<i>Review Processes & Adaptive Management as Required</i>	<i>Adaptive Management Process Fully Engaged</i>
Land Steep slopes, cliffs and pagodas (Continued)		<p>ACTIONS & RESPONSES:</p> <ul style="list-style-type: none"> No response required. <p>Continue Subsidence Monitoring Program.</p>	<p>ACTIONS & RESPONSES:</p> <p>In addition to Condition Amber action/responses for <i>Underground Mining Control and/or Ground Movement and Subsidence Effects Monitoring</i>, Clarence will:</p> <p>Level A: Surface impacts are not observed but monitoring indicates their potential to occur:</p> <ul style="list-style-type: none"> Engage suitably qualified geotechnical/civil engineer to assess the public safety risk, likelihood for mine-induced surface impacts, assess cause and effect, and Record Assessment If no public safety risk identified and/or mine-induced surface impacts are considered unlikely, continue Subsidence Monitoring Program If public safety risk identified and/or mine-induced surface impacts are considered likely: <ul style="list-style-type: none"> notify NPWS and key stakeholders and consider installation of warning signs / closure of access in affected areas Further notify Resource Regulator under relevant WHS laws (i.e., for high potential incidents) Undertake targeted surface visual inspection over area possibly impacted and if surface impacts are observed refer Level B responses <p>Level B: Surface impacts are observed:</p> <p>In addition to Level A action/responses above, Clarence will review available data or undertake targeted surface investigations to confirm if the impact is mining-induced or related to natural surface movements or activation of a natural feature:</p> <ul style="list-style-type: none"> If confirmed as not a mine-induced impact, continue Subsidence Monitoring Program and notify NPWS and key stakeholders If mine-induced impact is confirmed: <ul style="list-style-type: none"> Notify and consult with relevant stakeholders as per requirements specified within the Extraction Plan/SMP/PSMP, Development Consent and related approvals Compare the impacts to relevant approved performance measure thresholds (refer condition red trigger levels), if above thresholds, refer Condition Red responses Calibrate subsidence model and review mine design Implement Adaptive Management procedures where required 	<p>ACTIONS & RESPONSES:</p> <p>In addition to all actions and responses as per Condition Amber, Clarence will:</p> <ul style="list-style-type: none"> Take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur Undertake targeted surface inspections (by suitably qualified personnel) if safely and readily accessible (or aerial if otherwise) where potential impact necessitates further assessment is <u>required to quantify impacts</u>, as determined in consultation with key stakeholders (NPWS, DPHI and the NSW RR) Where fracturing has occurred and potential for instability is noted, undertake specialist geotechnical assessment to confirm level of residual instability, potential safety risks and recommended courses of action (with direction from PIS¹, DPHI, NPWS/BCD) Cease secondary extraction in relevant areas where appropriate (with direction from PIS¹ and DPHI) 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 Implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary <p>Written reporting to relevant agencies as per Development Consent/relevant approvals as detailed in Extraction Plan</p>