TOMINGLEY
GOLD OPERATIONS PTY LTD
(A wholly owned subsidiary of Alkane Resources Ltd)
ABN 53 149 040 371

Tomingley Gold Extension Project

Scoping Report

June 2021

Prepared by

R.W. CORKERY & CO. PTY. LIMITED

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Prepared for:

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R.W. CORKERY & CO. PTY. LIMITED

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CONTENTS

Page

CONTENTS

Page

FIGURES

CONTENTS

Page

TABLES

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1 INTRODUCTION

1.1 SCOPE

This *Scoping Report* has been prepared by R.W. Corkery & Co. Pty Limited on behalf of Tomingley Gold Operations Pty Ltd (the Applicant) to describe the proposed Tomingley Gold Extension Project (the Project). The Project is located immediately to the south of the village of Tomingley in central western NSW (**Figure 1**). The Project is located within the Narromine Local Government Area on land zoned RU1 – Primary Production and SP2 – Infrastructure under the *Narromine Local Environment Plan 2011*.

The Project, which would have a Capital Investment Value of $87 million, is classified as State Significant Development. As a result, the application for development consent is made under Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This *Scoping Report* has been prepared generally in accordance with the draft document *Preparing a Scoping Report* dated December 2020 and published by Department of Planning, Industry and Environment. This document is intended to provide the Department and relevant government agencies with sufficient information in relation to the proposed activities to enable Secretary's Environmental Assessment Requirements (SEARs) to be prepared. The document is also intended to inform the community and others about the Project and to facilitate consultation throughout preparation of the application for development consent.

This document supersedes an earlier *Scoping Report* dated October 2020 and has been prepared following completion of additional resource drilling (see Section 1.5.2) and further development of the Project description (see Section 3.4).

1.2 TERMINOLOGY USED

Throughout this document a range of terminology has been used to describe key aspects of the Project, as follows.

• The Project	All approved activities that are currently the subject of MP 09_0155 as well as those additional activities that would be the subject of any new development consent to be granted.
• The Applicant	Tomingley Gold Operations Pty Ltd
• TGO	The existing mining operations referred to as Tomingley Gold Operations. These operations are undertaken in accordance with the requirements of development consent MP 09_0155.
• SAR	San Antonio and Roswell deposits – the subject of the proposed mining operations.
• TGO Mine Site	Comprising the area the subject of MP 09_0155 and shown with a solid blue line on **Figure 2**.
• SAR Mine Site	Comprising the additional area to be incorporated within any new development consent to be granted and shown with a solid red line on **Figure 2**.

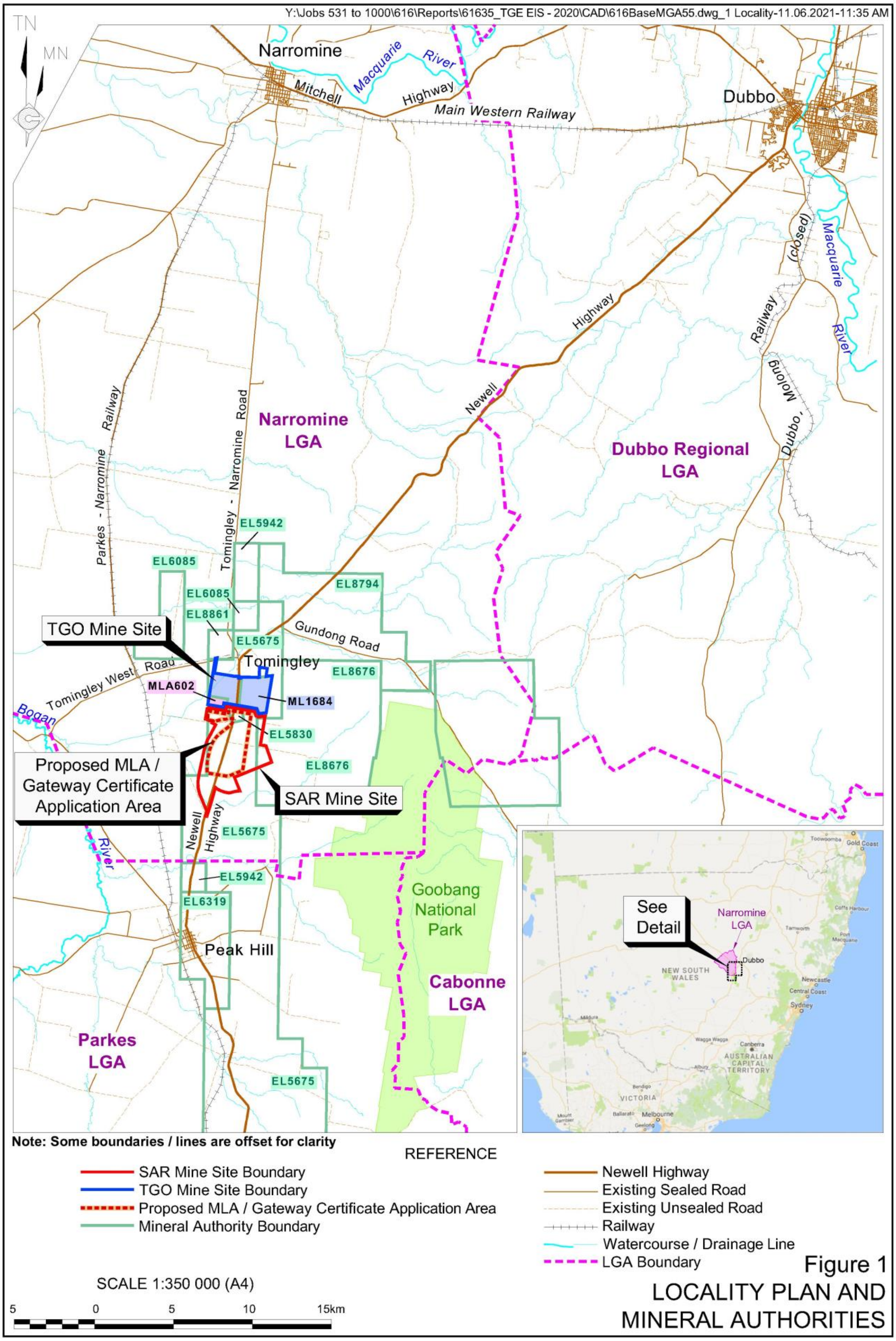
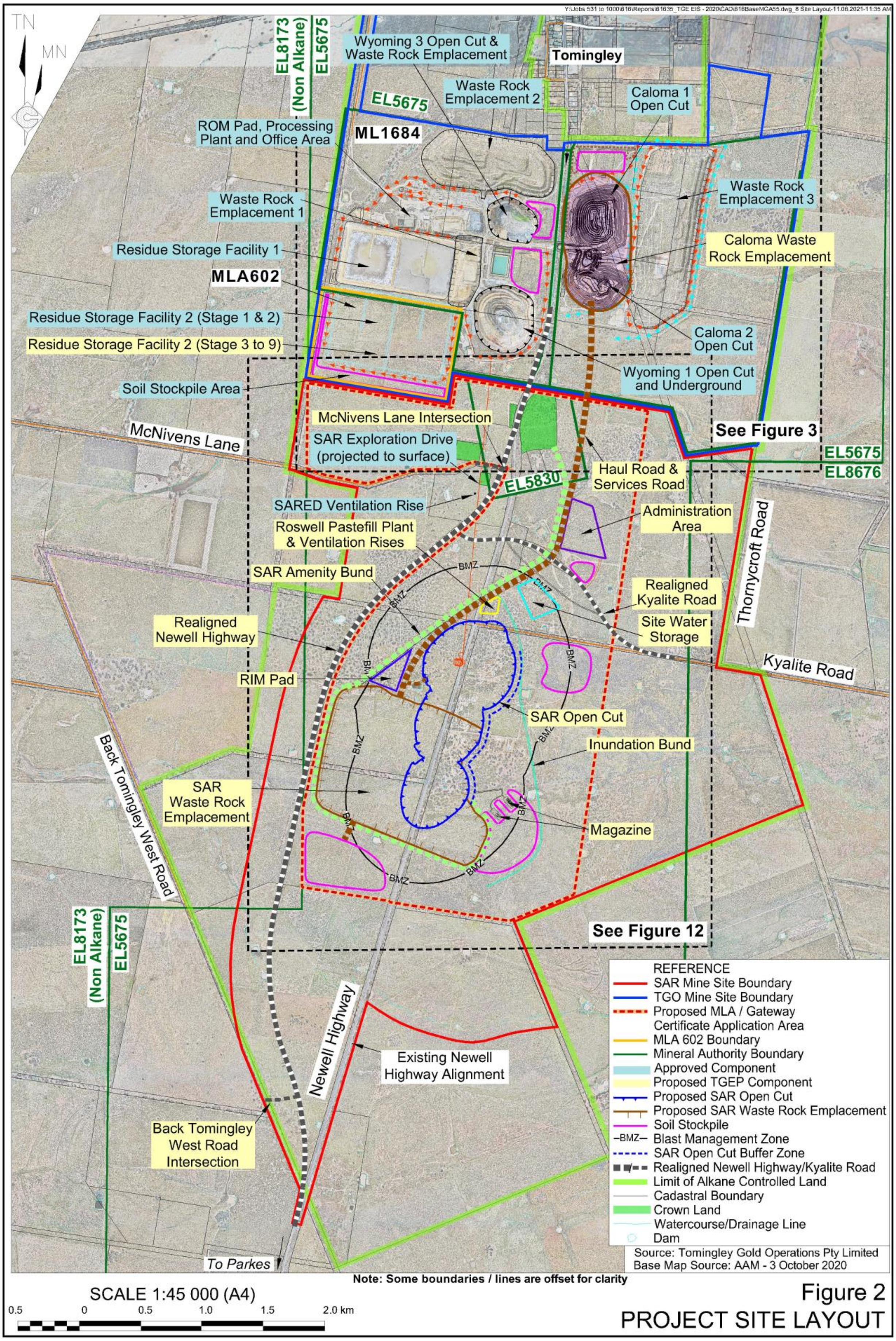


Figure 1
LOCALITY PLAN AND MINERAL AUTHORITIES



Source: Tomingley Gold Operations Pty Limited
Base Map Source: AAM - 3 October 2020

Note: Some boundaries / lines are offset for clarity

Figure 2
PROJECT SITE LAYOUT

• The Project Site	The combined area of the TGO and SAR Mine Sites and the area to be the subject of any new development consent to be granted.
• MLA Area	That area the subject of the proposed separate Mining Lease and Gateway Certificate Applications and shown with a dashed red line on an orange background on **Figure 2**.
• SAR Exploration Drive or SARED	The approved San Antonio Roswell Exploration Drive (SARED). The SAR Exploration Drive will be constructed entirely underground, from the existing Wyoming 1 underground workings to a position to the west of the SAR deposits. The drive will permit extraction of a bulk sample and drilling of the SAR deposits from underground. The only surface disturbance associated with the approved SAR Exploration Drive will be a ventilation rise, with all other activities undertaken underground. Additional ventilation rises are proposed as part of the Project

1.3 THE APPLICANT

The Applicant, Tomingley Gold Operations Pty Ltd, is the operator of TGO and is a subsidiary company of Alkane Resources Ltd (Alkane). Alkane is an Australian, publicly listed mining and exploration company which has been in existence since 1969. Alkane has a long-term involvement and ongoing commitment to the Central West of New South Wales and has substantial investment in the people and resources of the region. Alkane developed and operated the Peak Hill Gold Mine on the outskirts of Peak Hill from 1996 to 2005 and has now largely rehabilitated that site.

Alkane also developed and is currently operating TGO, as well as discovering and successfully obtaining all required approvals for the Dubbo Project (SSD-5251), located at Toongi, approximately 25km south of Dubbo. That project is now held by Australian Strategic Materials Limited which demerged from Alkane in July 2020.

Alkane also undertook the early exploration work on the McPhillamys prospect, currently the subject of a State Significant Development application by Regis Resources.

Finally, Alkane has an extensive package of exploration tenements throughout the Central West of NSW, with a recent discovery at Boda, north of Wellington, a significant focus for Alkane.

1.4 PROJECT OVERVIEW, OBJECTIVES AND IMPACT MITIGATION STRATEGIES

1.4.1 Project Overview

The Project comprises two components as follows.

- Approved TGO mining operations (**Figure 3**). These activities are undertaken in accordance with development consent MP 09_0155 (see Section 1.5.3). The approved activities would continue under any new development consent, with MP 09_0155 to be surrendered following receipt of the new development consent and all required approvals for the Project. The approved activities include the following.

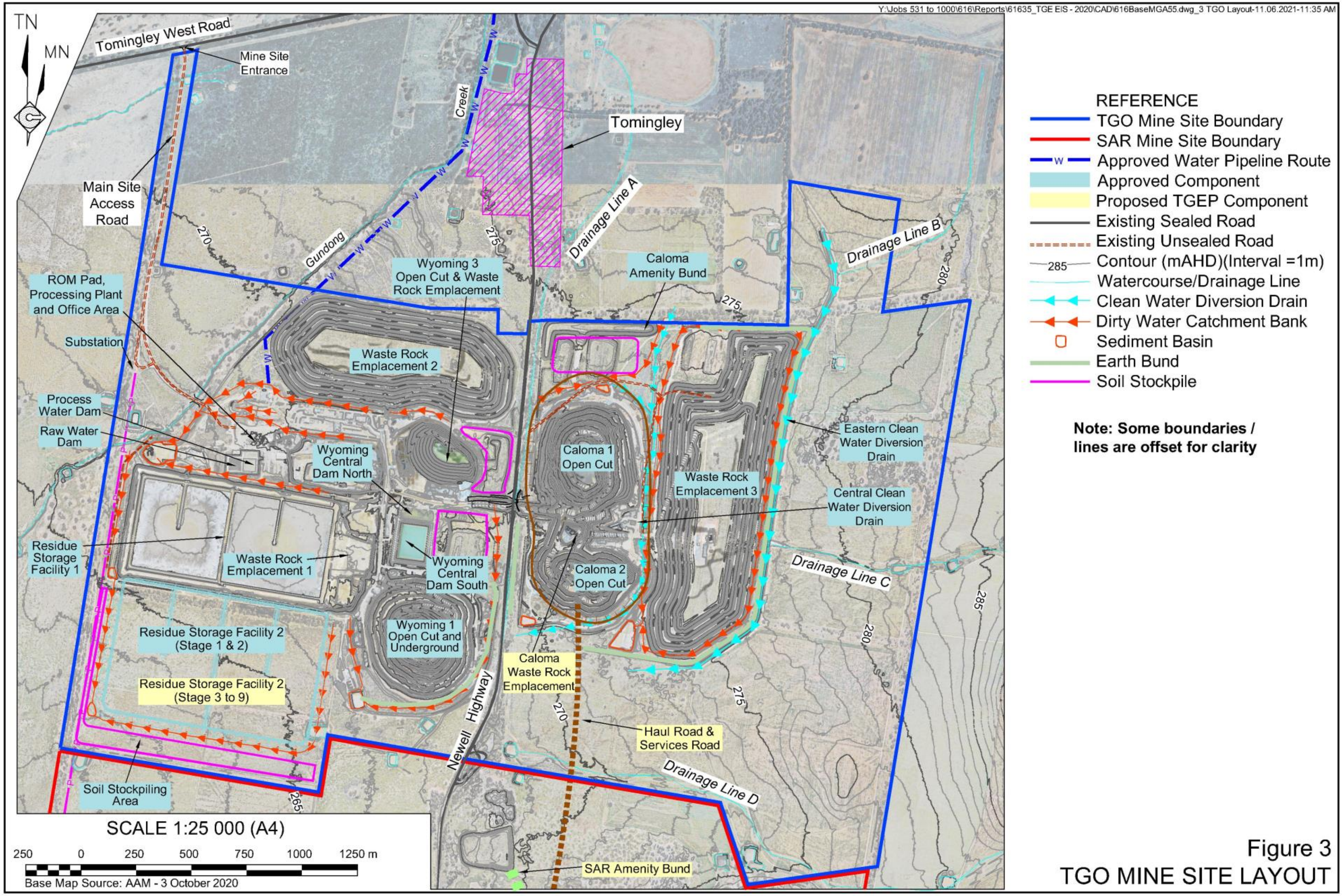


Figure 3
TGO MINE SITE LAYOUT

  - Extraction of ore and waste rock from four open cuts, with underground mining beneath three of those open cuts.
  - Construction of three out-of-pit waste rock emplacements and two in-pit waste rock emplacements.
  - Construction and use of various haul roads, a run-of-mine (ROM) pad and associated stockpiles.
  - Construction and use of a Processing Plant to process up to 1.5 million tonnes per annum (Mtpa).
  - Construction and use of two residue storage facilities comprising Residue Storage Facility 1 (to Stage 9 or a maximum elevation of 286.5m AHD) and Residue Storage Facility 2 (to Stage 2 or a maximum elevation of 272m AHD).
  - Construction and use of ancillary infrastructure.
- The proposed SAR operations and additional or modified TGO operations, including the following (see Section 3.4 and **Figures 2** and **3**).
  - Realigned Newell Highway and Kyalite Road and associated intersections with Back Tomingley West Road and McNivens Lane and Kyalite Road overpass.
  - The SAR Open Cut and Underground Mine.
  - Construction of two waste rock emplacements, namely the Caloma Waste Rock Emplacement, within the Caloma 1 and Caloma 2 Open Cuts, and SAR Waste Rock Emplacement, within the southern and central sections of the SAR Open Cut.
  - The SAR Amenity Bund, Haul Road and Services Road between the SAR Open Cut and the Caloma 2 Open Cut.
  - Minor modifications to the Processing Plant to increase the approved maximum processing rate from 1.5Mtpa to 1.75Mtpa and use of the Plant to process ore from the SAR Open Cut and SAR and TGO underground mining operations.
  - Increased capacity for Residue Storage Facility 2, from Stage 2 to Stage 9, with a maximum elevation of 286m AHD)
  - Associated surface and underground activities and infrastructure.

In addition, the Project would include an extension of the approved mine life, from 31 December 2025 to 31 December 2032.

1.4.2 Project Objectives

Consistent with the objectives of MP 09_0155, the objectives of the Project would be as follows.

- To safely and economically mine the identified gold reserves.
- To operate the Project in a manner that would minimise surface disturbance and impacts on surrounding residents and the local environment.

- To implement a level of management control and mitigation measures that ensures compliance with appropriate environmental criteria and reasonable community expectations.
- To develop and operate the Project in compliance with all relevant statutory requirements.
- To create a final landform that is suitable for a post-mining land of nature conservation, agriculture, or following receipt of additional approvals alternative industry.
- To continue to maintain an open and honest relationship with and to work cooperatively with the surrounding community to build socio-economic capacity within communities surrounding the Project Site.
- To achieve the above objectives in a cost-effective manner to ensure security of employment of employees and contractors and the continued economic viability of the Applicant, its suppliers and partners.

1.5 PROJECT BACKGROUND

1.5.1 Site History

Gold was first discovered at Tomingley in 1879, with the Tomingley Goldfield proclaimed on 19 June 1882 and the village of Tomingley proclaimed on 15 June 1894. A number of underground mining operations were located adjacent to the village and in the McPhail area, 3km south of Tomingley within EL5830 (**Figure 2**). One of these, the Myall United Gold Mine, produced approximately 70 000 ounces of gold over a 30-year period from 1883.

In 1913, mining ceased at McPhail, with tailings and slimes re-treated until 1924. These materials were again re-treated in the late 1990s during which time a new tailings dam, the McPhail Tailings Dam, was constructed and subsequently rehabilitated.

In 2001, the Applicant entered into an agreement with Compass Resources NL in relation to EL 5675 and Golden Cross NL in relation to EL 5830 to earn 100% of both tenements (**Figures 1** and **2**). The Applicant identified the Wyoming 1 deposit in 2001, followed by the Wyoming 3 deposit in 2002, the Caloma 1 deposit in 2006 and the Caloma 2 deposit in 2010. MP09_0155 for the operation of TGO was granted on 24 July 2012.

1.5.2 Geological Setting and Mineral Resources

The TGO and SAR deposits are hosted by the Mingelo Volcanics, a north-south orientated unit of Ordovician-aged volcaniclastic breccias, andesitic lavas, volcaniclastic sandstones and siltstones intruded by sub-volcanic feldspar porphyries (**Figure 4**). Immediately to the west of the Mingelo Volcanics is the slightly younger siltstones and sandstones of the Cotton Formation. The basement geology is almost entirely covered by alluvial sequences of clays, sand and gravel which ranges from approximately 20m to 60m thick.

Gold deposits within the Project Site are interpreted as orogenic gold systems positioned within a major north-south orientated structural zone (**Figures 4** to **6**). In addition to the TGO and SAR deposits, a number of additional exploration targets exist within the SAR Mine Site and the Applicant's Exploration Licence package. These prospects will be the subject of further exploration drilling over the life of the Project and may be the subject of subsequent applications for development consent should that exploration prove successful.

The Applicant has completed a number of Joint Ore Reserve Committee (JORC) compliant resource statements for TGO and SAR. **Tables 1** present an overview of the most recent estimates and **Figure 7** presents a three dimensional view of the most recent SAR resource block model.

Table 1
Summary of Mineral Resources[1]

Deposit	**Measured**		**Indicated**		**Inferred**		**Total**		
	Tonnage (Mt)	**Grade (g/t Au)**	**Tonnage (Mt)**	**Grade (g/t Au)**	**Tonnage (Mt)**	**Grade (g/t Au)**	**Tonnage (Mt)**	**Grade (g/t Au)**	**Total Gold (oz)**
Tomingley Gold Operations[2]									
Open cut	1.653	1.6	2.272	1.6	0.990	1.2	4.915	1.5	238 000
Underground	0.868	2.8	2.328	2.7	1.338	2.2	4.534	2.6	372 000
TGO Total	**2.521**	**1.8**	**4.600**	**2.2**	**2.328**	**1.5**	**9.449**	**1.9**	**610 000**
San Antonio and Roswell[3]									
Roswell			7.880	2.07	2.190	1.93	10.100	2.04	660 000
San Antonio			5.930	1.82	1.390	1.32	7.320	1.72	406 000
SAR Total			**13.800**	**1.96**	**3.580**	**1.69**	**17.400**	**1.90**	**1 066 000**

Note 1: A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction (JORC, 2012). A Mineral Resources does not take into account limitations associated with mining of the material and may be considered a "global" estimate of the mineral endowment.

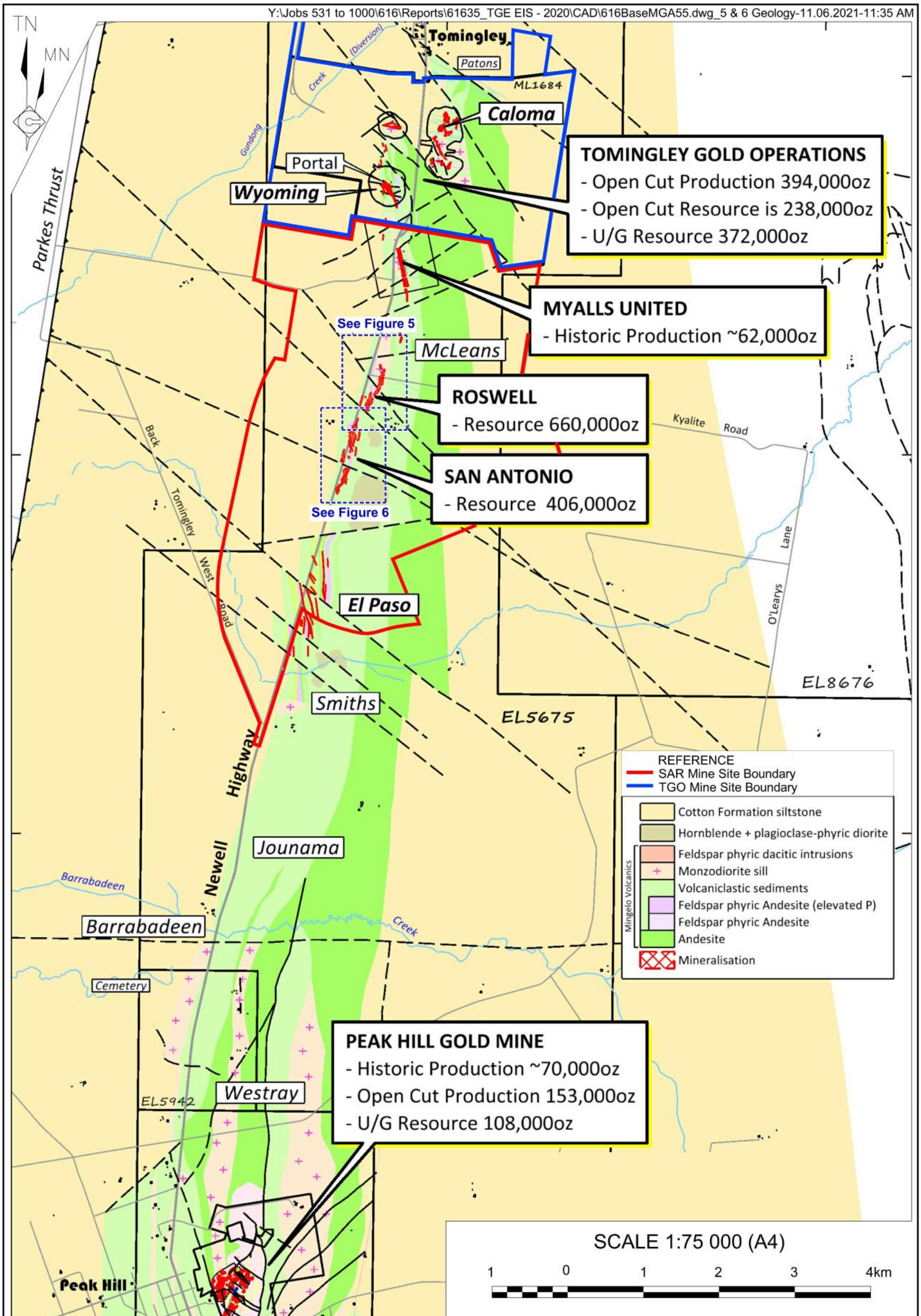
Note 2: Source – ASX announcement *Resource and Reserve Statements FY20* dated 18 August 2020.

Note 3: Source – ASX announcement *Updated San Antonio Resource Estimation Shows Contained Ounces for Tomingley Extension of ~1.1Moz* dated 16 February 2021.

1.5.3 Approved TGO Operations

TGO operates under State Significant Development Consent MP 09_0155 originally granted on 24 July 2012. MP 09_0155 has been modified five times, most recently on 5 May 2021. Approved activities at TGO include the following (**Figure 3**). All activities approved under MP 09_0155 would continue under any new development consent granted, with MP 09_0155 to be surrendered once that consent is operative.

- Mining of four open cuts, with underground mining under three of the approved open cuts, namely Wyoming One, Caloma and Caloma Two.
- Placement of waste rock into three out-of-pit waste rock emplacements (Waste Rock Emplacements 1, 2 and 3) and two in-pit waste rock emplacement (Wyoming 3 and Caloma 2). Waste Rock Emplacements 2 and 3 are complete and, with the exception of a small area on the upper surface of Waste Rock Emplacement 3, are under rehabilitation.



TOMINGLEY GOLD OPERATIONS
- Open Cut Production 394,000oz
- Open Cut Resource is 238,000oz
- U/G Resource 372,000oz

MYALLS UNITED
- Historic Production ~62,000oz

ROSWELL
- Resource 660,000oz

SAN ANTONIO
- Resource 406,000oz

PEAK HILL GOLD MINE
- Historic Production ~70,000oz
- Open Cut Production 153,000oz
- U/G Resource 108,000oz

Figure 4
IDENTIFIED EXPLORATION PROSPECTS

Source: Alkane Resources Ltd

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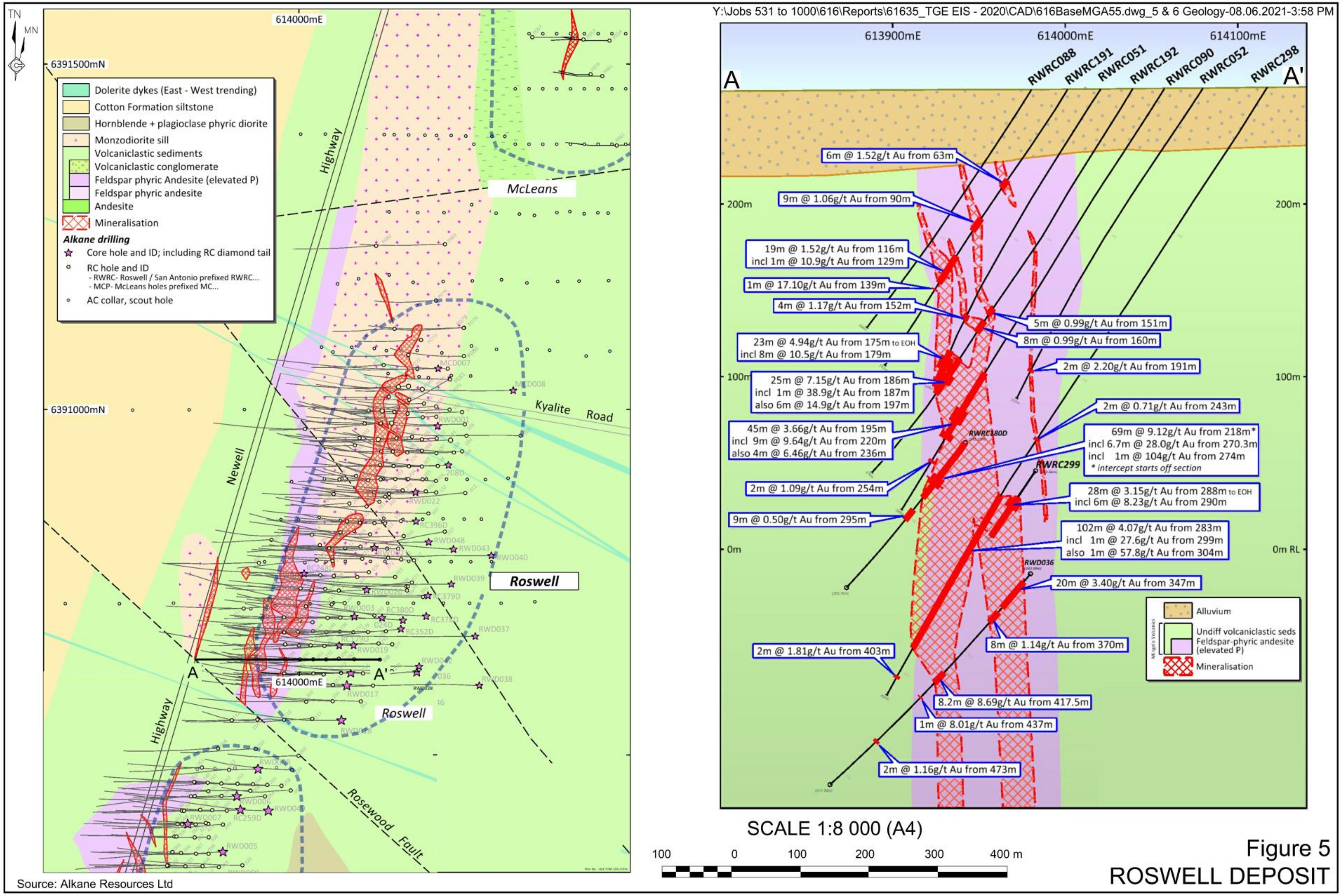

Source: Alkane Resources Ltd

Figure 5
ROSWELL DEPOSIT

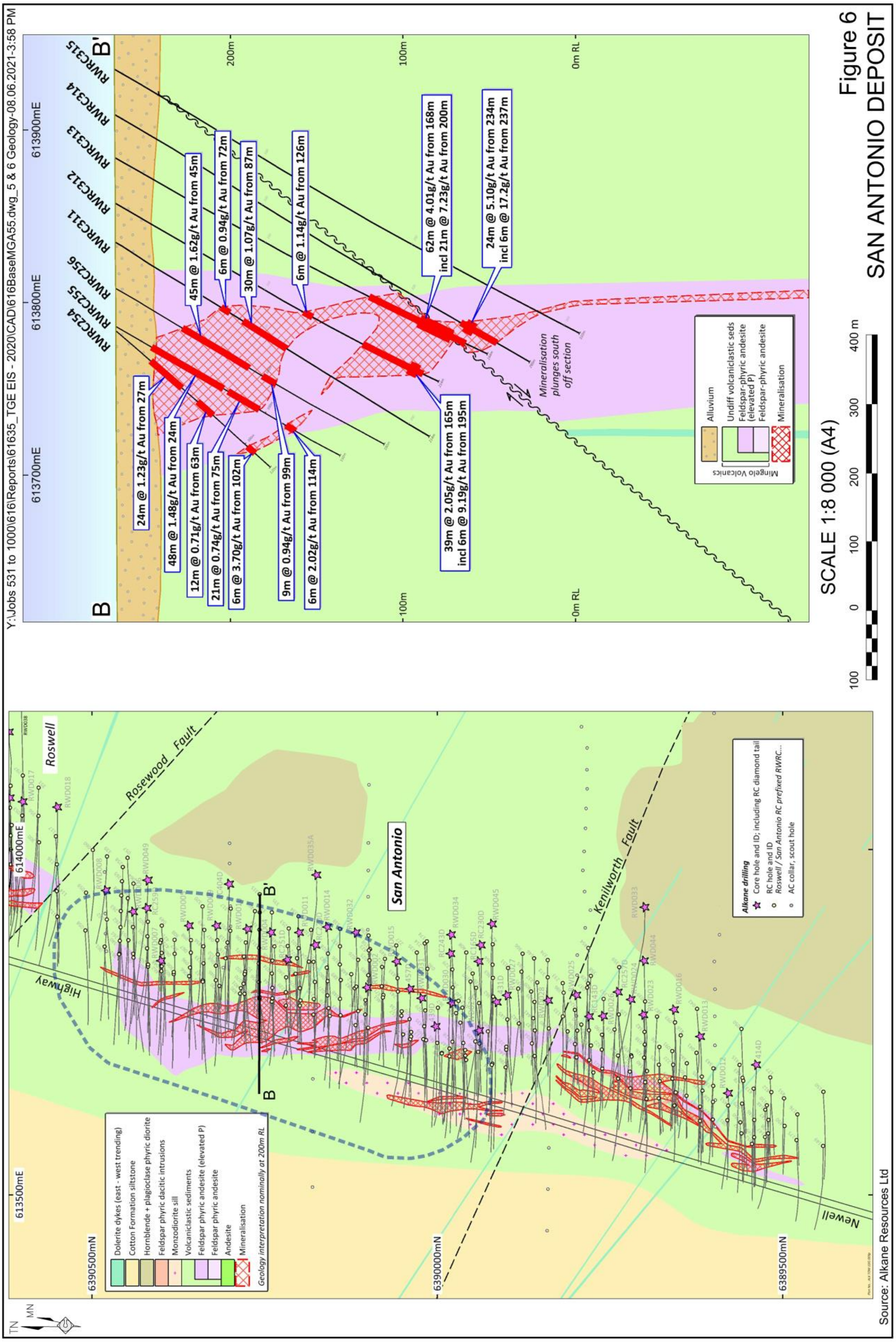

Figure 6
SAN ANTONIO DEPOSIT

Source: Alkane Resources Ltd

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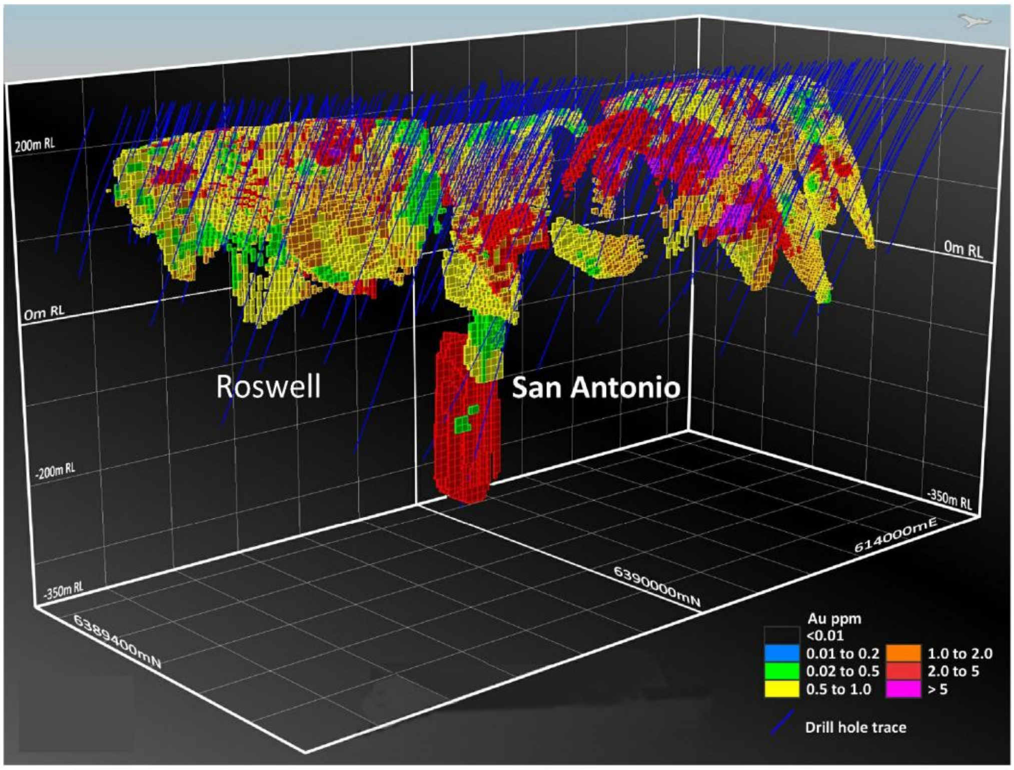

Source: Alkane Resources Limited

Figure 7
3D BLOCK MODEL LOOKING SOUTHEAST

- Construction and use of a carbon-in-leach Processing Plant and associated infrastructure, including a run-of-mine (ROM) pad, crushing, grinding and cyanide leaching circuits, workshops, ablutions facilities, stores, office area and car parking. The maximum approved rate of processing is 1.5Mtpa.
- Construction and use Residue Storage Facility 1 (to Stage 9 or 286.5m AHD) and Residue Storage Facility 2 (to Stage 2 or 272m AHD) for the storage of process residues.
- Construction and use of infrastructure, including:
  - dewatering ponds;
  - a water pipeline, from a licensed bore located approximately 7km to the east of Narromine;
  - various internal and external roads, including an underpass beneath the Newell Highway and upgrades to Tomingley West Road and associated intersections;
  - a transformer and electrical distribution network within the Mine Site and 20km 66kV electricity transmission line from Peak Hill substation;
  - various clean and dirty water management structures; and
  - fenced and unfenced biodiversity offsets and vegetated amenity bunds.

Mining operations are approved until 31 December 2025.

Construction of TGO commenced in February 2013 with open cut mining commencing in November 2013. Underground mining development from a portal in the Wyoming 1 Open Cut commenced in January 2019, with ore production from stopes commencing in December 2019.

TGO operates up to 365 days per year and 24 hours per day using two 12 hour shifts and processes up to 1Mtpa of gold ore. A total of 215 personnel were employed at the Mine in May 2021, with an annualised salary and wages expenditure of $25.0 million. During FY2021/2022 this is expected to increase to 250 personnel employed at the mine, with an annualised salary and wages expenditure of $29.2 million.

It is anticipated that during the FY2021/2022 between $4 million and $5 million will be spent on products and services with local businesses, approximately $124,000 will be paid to Narromine Shire Council and approximately $3 million will be paid to the State of NSW in royalties.

1.5.4 Approved SAR Exploration Decline Activities

The Proponent was granted approval for the SAR Exploration Drive under the *Mining Act 1992* by the Resources Regulator on 7 May 2020. The approved activities include the following (**Figure 2**).

- Development of an underground exploration drive from the existing Wyoming 1 underground workings to an underground position to the west of the SAR deposits.
- Establishment and use of ancillary infrastructure, including a single ventilation rise. The SARED Ventilation Rise will be the only surface disturbance associated with the exploration program. An application to modify the approved location of the SARED Ventilation Rise is in progress will be submitted to the Resources Regulator.
- Drilling of approximately 72,000m of exploration drill holes.
- Extraction of one or more bulk samples totalling no greater than 20,000t.
- Collection of data that for mine planning and environmental assessment purposes.

The SAR Exploration Drive would, following receipt of development consent, be converted from an exploration drive to a production drive (see Section 3.4.4.2) and all activities approved under the *Mining Act 1992* approval would be incorporated into any subsequent development consent.

1.5.5 Feasible Alternatives

Section 3.5 presents the feasible alternatives that have been considered and continue to be considered for the Project.

1.5.6 Key Mitigation Strategies

The following key mitigation strategies have been incorporated into the design of the Project to avoid or minimise the impacts of the proposed activities.

- Maximum use of existing infrastructure has been made to limit the potential for duplication or additional impacts.
- The layout of the Project has been designed to balance disturbance of areas of high biodiversity value with areas of high agricultural productivity.
- Waste rock would, to the extent practicable, be placed within in-pit Waste Rock Emplacements, thereby minimising the area to be disturbed for waste rock management and reducing the number of final voids from the currently approved three to two.
- SAR Amenity Bund would be constructed to ensure that mining-related activities are generally not visible from the north, west or south of the proposed disturbance areas.
- An overpass would be constructed on Kyalite Road to ensure that users of that road are able to safely pass over the Haul Road and Services Road, without the need for major diversion of Kyalite Road.
- Extensive consultation with surrounding landholders has commenced to ensure that particular concerns are identified early in the preparation of the EIS and, to the extent practicable, are able to be addressed at the planning stage.
- A highly skilled and qualified team of Specialist Consultants has been assembled to undertake detailed assessments of the anticipated environmental aspects of the Project and ensure that likely Project-related impacts are accurately identified and mitigated throughout the preparation of the EIS.

2 STRATEGIC CONTEXT

2.1 PROJECT JUSTIFICATION

2.1.1 Introduction

The NSW Government has published a range of planning documents that collectively provide the basis for government strategic planning for NSW. Central to many of these documents is the recognition that the mining, agriculture and transport industries provide essential employment and economic activity for regional areas of NSW and that each of these industries must be developed in a manner that supports the communities and environment within which those industries operate. The planning documents that are relevant to the Project and a brief description of how each of those documents provides strategic support to the Project are outlined in the following subsections. Additional discussion of each of these documents will be provided in the EIS.

2.1.2 Strategic Plans

2.1.2.1 Economic Development Strategy for Regional NSW

The *Economic Development Strategy for Regional NSW* (the Strategy), published by the Department of Trade and Investment, Regional Infrastructure and Services in 2015, provides a framework for the NSW government with the aim of driving economic growth in regional NSW. The Strategy covers all regional NSW, encompassing all industries and sectors within the State. Mining is highlighted as one of the key drivers of economic growth. The Strategy identifies five high level goals encompassing twenty-three actions for Governments. The following identifies how the Project is consistent with the relevant goals and actions.

Goal 1 – Promote key regional sectors and regional competitiveness

The Strategy highlights the mining industry as one of the top three contributors to Gross Regional Product, alongside manufacturing and healthcare and social assistance The Project would be consistent with the following actions.

- Action 1.2 - Increase the value of NSW's mineral industry and the energy sector.

  The Project would help to increase the value of NSW mineral industry through the continued delivery of mineral product as well as the continued support, utilisation and development of the supporting industries.

Goal 2 – Drive regional employment and regional business growth

Regional employment and business growth is highlighted as a key goal of the Strategy. The Strategy states that increasing the regional skill base as a means to offset the effects of population decline in regional NSW is a key priority; in particular, the development of youth and Aboriginal employment outcomes. The Project would be consistent with the following actions.

- Action 2.1 - Promote regional job creation.

  The Project would enable the retention of approximately 250 existing jobs over the life of the Project, as well as provide for a further jobs over the construction and development phase of the Project.

- Action 2.4 - Increase regional skills base and Action 2.5 - Improve Aboriginal employment and business outcomes.

  The Project would permit the Applicant to continue to employee apprentices and trainees and contribute to training programs for the local community, including the Aboriginal community through its partnership with the Peak Hill and other local Aboriginal communities.

2.1.2.2 20-Year Economic Vision for Regional NSW

The *20-Year Economic Vision for Regional NSW* (the Vision) published by the NSW Government in February 2021, aims to drive sustainable, long-term economic growth in regional NSW and unlock the significant economic potential of the regional areas in NSW. The Vision aims to add 180 000 residents and 64 000 jobs to regional areas in NSW over the next 20 years. Mining is identified as one of the seven "engines" of the regional NSW. The Vision describes several priority actions for regional economic development. The following identifies how the Project is consistent with these priority actions.

- Principle 2 - Improved travel between regional centres and from regional centres to international gateways

  The Project would result in an upgraded Newell Highway with improved safety features and flood protection.

- Principle 5 - A skilled labour force for current and future needs of the regions.

  The Project would enable the Applicant to continue to employ and train regionally-based employees, including young people and members of the Aboriginal community.

2.1.2.3 Central West and Orana Regional Plan 2036

The *Central West and Orana Regional Plan 2036* (the Regional Plan) published by the NSW Department of Planning and Environment in June 2017 sets out the NSW Government's blueprint for the future of the Central West and Orana Regions to 2036. The Regional Plan covers an area including Nyngan and Condobolin in the west, Cowra in the South, Oberon and Lithgow in the east and Coonamble and Coonabarabran in the north. The Regional Plan identifies four goals, each with multiple sub-goals of directions, as follows. The following also identifies how the Project is consistent with each of those goals.

Goal 1 – The most diverse regional economy in NSW

The Regional Plan identifies that agriculture, manufacturing and mining are the Region's traditional industries. However, health, education and tourism sectors present new opportunities for economic growth. The Project would be consistent with the following Directions.

- Direction 1: Protect the region's diverse and productive agricultural land.

  The Project would disturb limited additional agricultural land with the scale of the likely agricultural impacts to be assessed in the EIS. Agriculture will continue to operate alongside the proposed mining operations.

- Direction 6: Expand education and training opportunities.

  The Project would permit the Applicant to continue to employee apprentices and trainees and contribute to training programs for the local community. This would include the Aboriginal community through its partnership with the Peak Hill and other local Aboriginal communities. This support would be maintained for the life of the Project, with the potential for ongoing support after that should additional resources be identified.

- Direction 7: Enhance the economic self-determination of Aboriginal communities.

  The Applicant has a long history of working with the Peak Hill Aboriginal community to promote training and business opportunities, including the Peak Hill Open Cut Experience. Alkane is engaged with and sponsors the Clontarf Foundation (Narromine Academy), an organisation that exists to improve the education, discipline, life skills, self-esteem and employment prospects of young Aboriginal and Torres Strait Islander men.

- Direction 8: Sustainably manage mineral resources.

  The Project would ensure that the identified mineral resources would be developed in a manner that would optimise the benefits to the community and State, while minimising environmental and social impacts to the greatest extent practicable.

Goal 2 – A stronger, healthier environment and diverse heritage

The Regional Plan identifies that the Central West and Orana Regions have some of Australia's most unique ecological systems and that achieving environmentally sustainable development will balance rural and urban compatibility issues. The Project would be consistent with the following Directions.

- Direction 13: Protect and manage environmental assets.

  The Project would disturb limited areas of native vegetation, with the nature and scale of that disturbance assessed in accordance with the Biodiversity Assessment Methodology and suitable biodiversity credits retired to offset any residual impacts.

- Direction 16: Respect and protect Aboriginal heritage assets.

  The Project would disturb a limited number of Aboriginal objects. The Applicant has a long history of consulting with the Aboriginal community and developing suitable mechanisms to manage any impacts that may occur as a result.

Goal 3 – Quality freight, transport and infrastructure networks

The Regional Plan identifies that the Central West and Orana Regions are a major exporter of agricultural, mining and other value-added products and relies on efficient freight and transport infrastructure. The Project would result changes to the alignment of the Newell Highway, with an additional travel time of approximately 14 seconds for highway users. In order to offset the very minor additional travel time, the Applicant would improve the flood protection of the existing Highway from between 10% and 20% Annual Exceedance Probability (AEP) to approximately 5% AEP.[1]

Goal 4 – Dynamic, vibrant and healthy communities

The Regional Plan identifies that Central West and Orana is home to some of the most diverse communities in NSW. Population growth will not be evenly distributed, with larger towns such as Orange, Bathurst, Mudgee and Dubbo expected to grow, while the population of other smaller towns and villages is likely to remain relatively stable or in some cases decline. These smaller communities can grow and prosper by leveraging economic opportunities and jobs from an increasing number of value-adding investments.

The Project would be consistent with the following Directions.

- Direction 23: Build the resilience of towns and villages.

  The Project would ensure continued operation of the Mine until 31 December 2032. This would help support the small villages and towns surrounding the Mine, including Tomingley, Peak Hill and Narromine, and provide additional economic activity in those communities.

- Direction 24: Collaborate and partner with Aboriginal communities.

  The Applicant has a long history of collaborating with the Peak Hill and other local Aboriginal communities. The Project would provide the resources for that ongoing collaboration to continue.

2.1.2.4 Narromine Shire Community Strategic Plan 2027

The *Narromine Shire Community Strategic Plan 2027* provides the community vision and aspirations for the future of the Narromine Shire and a long-term framework to guide and influence delivery of that vision. The Plan lists a number of relevant guiding principles. The following also identifies how the Project is consistent with each of those principles.

Principle 1 – Vibrant communities

The Project would ensure that the Applicant can continue to offer a range of training and education opportunities for its employees and others consistent with Action 1.3 of the Plan.

Principle 2 – Growing our economy

The Project would ensure continued operation of the Mine until 31 December 2032. This would be consistent with each of Actions identified under this Principle.

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[1] The Annual Exceedance Probability is a measure of the probability of an event occurring, in this case flooding of the Newell Highway, in a given year.

Principle 3 – Protecting and enhancing our environment

The Project would, to the extent practicable, manage and mitigate environmental impacts to ensure that all impacts are consistent with revenant assessment criteria and reasonable community expectations.

2.1.3 Planning Instruments

A range of statutory planning instruments apply to the Project. These include, but may not be limited to, the following. Each of the following will be addressed in EIS to be prepared to support the application for development consent. The Applicant will ensure that the Project would be consistent with the requirements of each of these instruments.

- *State Environmental Planning Policy (Infrastructure) 2007.*
- *State Environmental Planning Policy (Koala Habitat Protection) 2021.*
- *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.*
- *State Environmental Planning Policy No 33—Hazardous and Offensive Development.*
- *State Environmental Planning Policy (State and Regional Development) 2011.*
- *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2020.*
- *Water Sharing Plan for the Macquarie Bogan Unregulated Rivers Water Sources 2012.*
- *Narromine Local Environmental Plan 2011.*

2.1.4 Policy Documents

A range of policy documents apply to the Project. These include, but may not be limited to, the following. Each of the following will be addressed in EIS. The Applicant will ensure that the Project would, to the extent practicable, be consistent with the requirements of each of these policies.

- *Aquifer Interference Policy.*
- *Guidelines for Controlled Activities.*
- *Noise Policy for Industry.*
- *NSW Road Noise Policy.*
- *Interim Construction Noise Guideline and the draft Construction Noise Guideline.*
- *Biodiversity Assessment Method.*
- *Biodiversity Offsets Scheme.*
- *Aboriginal Cultural Heritage Consultation Requirements for Applicants 2010.*
- *Code of Practice for Archaeological Investigations of Objects in NSW.*

- *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW.*
- *Guide to Traffic Generating Developments 2002 (RTA).*
- *Austroads Guide to Road Design and TfNSW supplements to road design.*
- *Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development.*
- *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33.*
- *Waste Classification Guidelines.*

2.1.5 Project Justification

The Applicant contends that the Project would permit the continued operation of TGO, including the extraction of a State-owned resource for the benefit of the residents of the Narromine Local Government Area, the Central West and Orana Regions and NSW as a whole, as well as the Applicant’s employees, suppliers and shareholders. The Project would be consistent or compliant with relevant components of the Strategic Plans, Planning Instruments and Policy Documents.

2.2 KEY FEATURES OF THE SITE AND SURROUNDS

2.2.1 Introduction

The key features surrounding the Project Site that could affect or be affected by the Project include the local and regional community, surrounding land uses and land ownership, and surrounding natural and built features.

2.2.2 Local and Regional Community

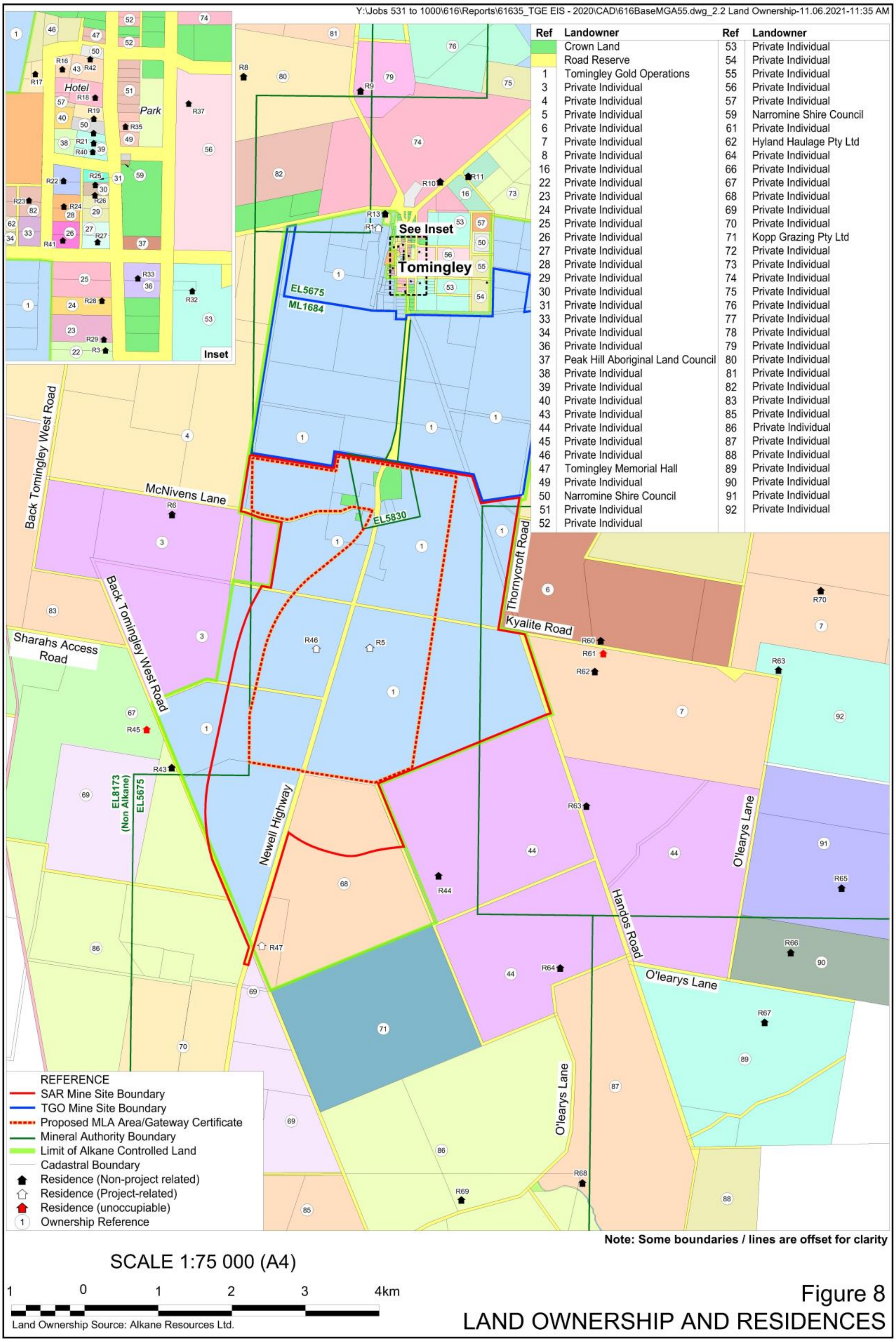
The Applicant has been intimately involved with the surrounding community since the 1990’s when it was operating the nearby Peak Hill Gold Mine. In summary, the communities surrounding the Project Site include the following.

- Surrounding rural residents.

  The area surrounding the Project Site is a rural area with agricultural properties, typically with one or two houses on each property (**Figure 8**). These are typically occupied by residents who rely on the agricultural operations on the properties for some or all their income or tenants.

- Residents of the village of Tomingley

  The Applicant understands that approximately 30 people live in the village of Tomingley, in approximately 24 residences (**Figure 8**). The village also includes a hotel, motel and service station, with a second service station under construction. Community facilities include a Rural Fire Shed, a Community Hall and Tomingley Recreation Grounds (Horse Racing Track).



Ref	Landowner	Ref	Landowner
🟩	Crown Land	53	Private Individual
🟨	Road Reserve	54	Private Individual
1	Tomingley Gold Operations	55	Private Individual
3	Private Individual	56	Private Individual
4	Private Individual	57	Private Individual
5	Private Individual	59	Narromine Shire Council
6	Private Individual	61	Private Individual
7	Private Individual	62	Hyland Haulage Pty Ltd
8	Private Individual	64	Private Individual
16	Private Individual	66	Private Individual
22	Private Individual	67	Private Individual
23	Private Individual	68	Private Individual
24	Private Individual	69	Private Individual
25	Private Individual	70	Private Individual
26	Private Individual	71	Kopp Grazing Pty Ltd
27	Private Individual	72	Private Individual
28	Private Individual	73	Private Individual
29	Private Individual	74	Private Individual
30	Private Individual	75	Private Individual
31	Private Individual	76	Private Individual
33	Private Individual	77	Private Individual
34	Private Individual	78	Private Individual
36	Private Individual	79	Private Individual
37	Peak Hill Aboriginal Land Council	80	Private Individual
38	Private Individual	81	Private Individual
39	Private Individual	82	Private Individual
40	Private Individual	83	Private Individual
43	Private Individual	85	Private Individual
44	Private Individual	86	Private Individual
45	Private Individual	87	Private Individual
46	Private Individual	88	Private Individual
47	Tomingley Memorial Hall	89	Private Individual
49	Private Individual	90	Private Individual
50	Narromine Shire Council	91	Private Individual
51	Private Individual	92	Private Individual
52	Private Individual		

REFERENCE
- SAR Mine Site Boundary
- TGO Mine Site Boundary
- Proposed MLA Area/Gateway Certificate
- Mineral Authority Boundary
- Limit of Alkane Controlled Land
- Cadastral Boundary
- ⌂ Residence (Non-project related)
- ⌂ Residence (Project-related)
- ⌂ Residence (unoccupiable)
- ① Ownership Reference

Land Ownership Source: Alkane Resources Ltd.

Figure 8
LAND OWNERSHIP AND RESIDENCES

- Surrounding villages and towns.

  The Project Site is surrounded by a number of other villages and towns, including the following.

  - Peak Hill, located approximately 18km to the south on the Newell Highway.
  - Narromine, located approximately 38km to the north on the Tomingley – Narromine Road.
  - Dubbo, located approximately 57km to the northeast on the Newell Highway.
  - Parkes, located approximately 67km to the south on the Newell Highway.

Approximately 95% of the Applicant’s employees reside within the above towns or surrounding areas.

2.2.3 Land Ownership

Figure 8 presents landownership within and surrounding the Project Site. The Applicant has purchased all freehold the land within the Project Site, with one further property, Property 68, under an agreement to be purchased. The Applicant has made an application to purchase two unnamed unformed paper roads adjoining TGO-owned properties from Crown Lands.

Finally, the Project Site includes the road reserves associated with the Newell Highway and Kyalite and Back Tomingley West Roads and McNivens Lane. It is anticipated that where road realignments are required that Applicant-owned land would be subdivided and transferred to the relevant road authority and that sections or road reserve no longer required for that purpose would be transferred to the Applicant.

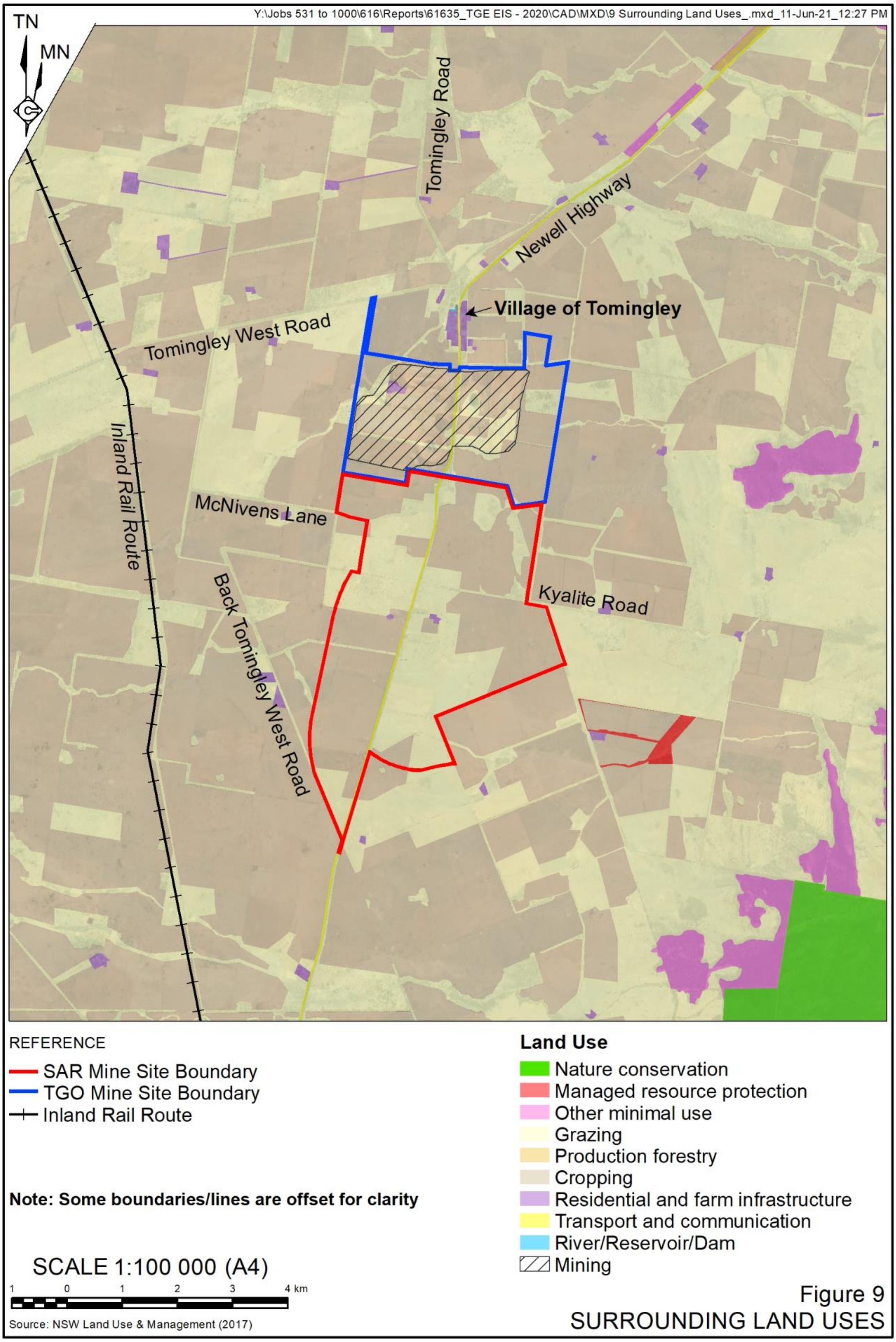
2.2.4 Surrounding Land Uses

Figure 9 presents land uses, as defined by the NSW Land Use and Management database within and surrounding the Project Site. In summary, the dominant land use is agriculture, predominantly cropping with intermittent grazing. Other land uses include the following.

- Mining associated with TGO.
- Road transportation associated with the Newell Highway and surrounding local roads.
- Rail transportation associated with the Inland Rail (under construction).
- Village residential associated with the village of Tomingley.
- Nature conservation and “other minimal use” associated with areas of native vegetation.

2.2.5 Natural and Built Features

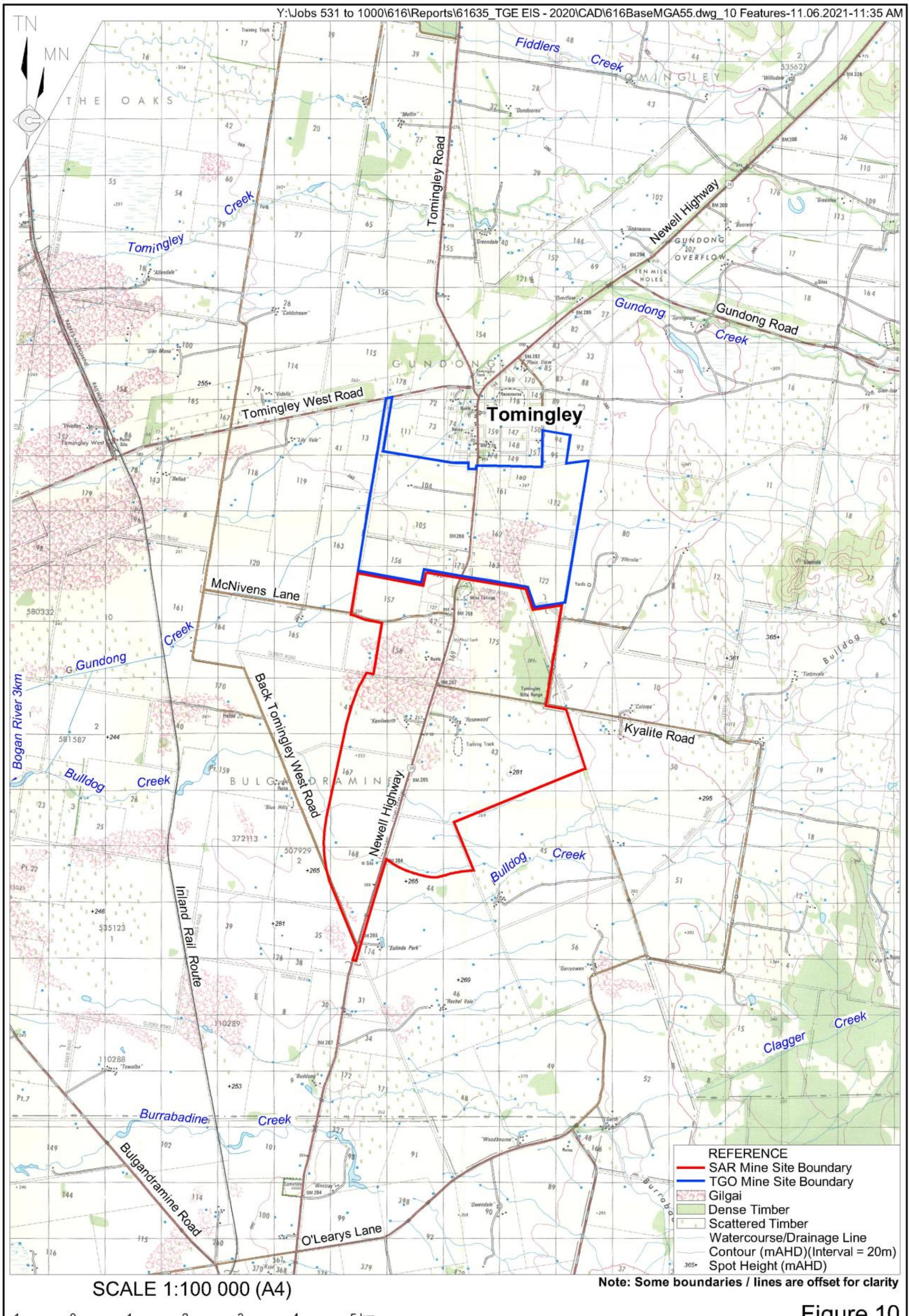
Figure 10 presents natural and built features surrounding the Project Site. Natural features include the following.



Note: Some boundaries/lines are offset for clarity

Source: NSW Land Use & Management (2017)

Figure 9
SURROUNDING LAND USES



Source: Sappa Bulga & Peak Hill 1:50 000 Topographic Maps

Figure 10
NATURAL AND BUILT FEATURES

- Generally flat to very flat topography, with elevations of between 373m AHD and 260m AHD and slopes from east to west of typically less than 1:100 (V:H). Occasional low hills and rises are present with maximum elevations of between 280m AHD and 373m AHD and slopes of between 1:10 (V:H) and 1:50 (V:H). Gilgais, or areas that are internally draining, are common within and surrounding the Project Site.
- Surface water flows typically occur as sheet flows, with occasional, poorly to moderately defined, west flowing watercourses, including, from north to south, Tomingley, Gundong and Bulldog Creeks, as well as a number of unnamed water courses. The Newell Highway in the vicinity of the Project Site has substantially altered surface water flows, with the Highway flooding under rainfall events of between 25% and 33% Annual Exceedance Probability (AEP), i.e. every 3 to 4 years.

Built features include the following (**Figure 10**).

- The TGO Mine Site and associated mining-related infrastructure.
- The Newell Highway, a State road that comprises the principal heavy vehicle transportation route between the southern central section of NSW and Victoria and northern NSW and Queensland.
- Tomingley – Narromine Road, a Regional road between Narromine and Tomingley.
- Local roads, including Kyalite, Thornycroft, Tomingley West and Back Tomingley West Roads and McNivens and O’Learys Lanes.
- Inland Rail, a 1 700km rail link between Melbourne and Brisbane that is currently under construction, with the Parkes to Narromine section in the vicinity of the Project Site complete.
- The village of Tomingley, including residences, a hotel, a motel, an existing and a proposed service station and associated Highway and other infrastructure.
- Agricultural infrastructure, including farm residences, shed, fences, silos and improved and unimproved pasture and cropping land.
- Above ground powerlines and buried telecommunication infrastructure.

2.2.6 Risks and Hazards

An environmental risk assessment for the Project will be undertaken and presented in the EIS. However, key risks and hazards associated with the Project include the following.

- Traffic and transportation, including realignment of the Newell Highway and Kyalite Road.
- Surface water, flooding and erosion and sediment control, including diversion of surface water around the active sections of the SAR Mine Site, under the realigned Newell Highway and back into natural drainage.

- Final landform and land use, including backfilling of completed open cuts without sterilising remaining resources, establishment of acceptable final landforms and rehabilitation of those landforms.
- Visual amenity, including design of acceptable active and final landforms.
- Soils, land capability and agriculture, including disturbance of land that may be classified as Biophysical Strategic Agricultural Land (BSAL) and reestablishment of BSAL-equivalent land.
- Biodiversity, including disturbance of areas of native vegetation.
- Noise, vibration and air quality, particularly for those residences to the south and east of the SAR Mine Site.
- Amenity and social impacts, including impacts to the social and community fabric of residents to the east south and west of the SAR Mine Site who will experience mining-related operations much closer than the existing TGO-related activities.

The following environmental aspects are not anticipated to be significant risks or hazards for the Project for the following reasons.

- Groundwater - groundwater inflows to the existing TGO mining operations have historically been negligible or not measurable. Notwithstanding this, a detailed groundwater assessment, including a program of numerical modelling, is in progress.
- Heritage –a heritage survey undertaken in consultation with the local Aboriginal community identified few Aboriginal objects. Detailed consultation with the Aboriginal community is ongoing.
- Economic – the anticipated impacts would likely be positive and would simply represent a continuation of the existing economic contributions associated with TGO.
- Bushfire – the Project Site is located in an area that has largely been cleared for agriculture.

These key risks would be controlled using the management and mitigation measures that will be detailed throughout the EIS.

2.3 CUMULATIVE IMPACTS

Cumulative impacts from the Project will be addressed in the EIS. In summary, the cumulative impact from the Project would be associated with potential increased or relocated activities when compared with the existing, approved activities within the TGO Mine Site.

2.4 AGREEMENTS

The Applicant has a Planning Agreement with Narromine Shire Council that addresses the following matters.

- Maintenance of local roads.
- Contributions to a Community Fund.
- Contribution to the provision of environmental management expertise to Council.

The Applicant has commenced discussions with Council in relation to an extension of the current agreement, with the EIS to include further details of any extended agreement negotiated.

Consultation with the surrounding community has commenced and will be ongoing throughout the preparation of the EIS and assessment of the application for development consent, as well as during operation of the Project. The Applicant anticipates that a number of confidential agreements will be negotiated with surrounding landholders based on their particular circumstances and anticipated impacts on their property.

The Applicant has engaged with the local Peak Hill Aboriginal Community during the cultural heritage survey work for the Project and has established Registered Aboriginal Parties to assess impacts of the final Project design on any heritage items. The Applicant anticipates that the Aboriginal Community Engagement Protocol between the Applicant and the Peak Hill Wiradjuri dated June 2010 will be updated.

2.5 ECONOMIC AND SOCIAL TRENDS

The Australian Bureau of Statistics[2] provided a range of data in relation to economic and social trends within the Dubbo Statistical Area. This area includes the towns of Narromine, Dubbo, Wellington, Gilgandra and Coonabarabran, as well as the village of Tomingley. That data identifies the following economic and social trends surrounding the Mine Site.

- Industry - agriculture is an important industry employing 10.8% of the workforce in 2016, down from 11.3% in 2011. Mining, while employing only 1.1% of the workforce in 2016, up from 0.9% in 2011, is an important and growing contributor to the economy. As a result, the Project would continue to support the local economy through the provision of jobs in this important industry.
- Income – the median personal income within the Dubbo Statistical Area was $617 per week in 2016, up from $506 per week in 2011 . This compares with substantially higher salaries paid by the Applicant to its workers, the majority of whom live locally. As a result, the Project would continue to support the local economy through the provision of high paying jobs and other benefits.

Anecdotally, the Applicant understands that the recent drought and current COVID-19 and mouse plague challenges have had a significant impact on rural communities surrounding the Project Site, including reduced employment, consumption and economic activity and the associated social impacts that that entails. The Project would ensure that the Applicant is able to continue to employ local workers and contribute to a local, diverse economy.

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[2] URL - https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/communityprofile/10503?opendocument – Time Series Profile

2.6 ENVIRONMENTAL TRENDS

The Applicant notes that the recent drought had a substantial impact on the natural environment surrounding the Project Site. There is also a growing recognition of the importance of preserving the areas important biodiversity while ensuring the continued development of a diverse and vibrant economy that is not reliant on a single industry such as agriculture. The Project would, to the extent practicable, manage and mitigate environmental impacts to ensure that all impacts are consistent with relevant assessment criteria and reasonable community expectations.

3 PROJECT OVERVIEW

3.1 INTRODUCTION

This subsection presents an overview of the Project in sufficient detail to enable Secretary's Environmental Assessment Requirements to be prepared and to facilitate community and agency consultation. The Applicant is continuing to evaluate the Project and the proposed activities described in this subsection may be amended throughout the design phase of the Project. As a result, the Project as eventually described in the EIS may vary from that presented here.

3.2 PROJECT SITE

As indicated in Section 1.2, the Project Site comprises the combined area of the TGO and SAR Mine Sites. **Table 2** and **Figure 11** present the land titles within the Project Site.

Table 2
Project Site

Lot	DP	Lot	DP	Lot	DP
TGO Mine Site					
156	755093	2	1151198	122	755110
1623	1178801	161	755110	112	755110
1621	1178801	160	755110	2*	1151198
105	755110	162	755110	95	755110
104	755110	163	755110	94	755110
103	755110	1	1151198	111	755110
3*	1151198	1	254193		
Road reserve associated with the Newell Highway					
SAR Mine Site					
3	1213503	1622	1178801	1	820746
4	1213503	7003	1020605	122	755110
101	1271511	7300	1151814	2	254193
44	755093	176	722842	43	755093
86	755093	157	755093	2	1157935
1	1273565	175	755093	1623	1178801
127	755093	169	755093		
Road reserves associated with the Newell Highway, McNivens Lane, Kyalite Road, Back Tomingley West Road and various unformed paper roads.					
Note 1: * = part lot					

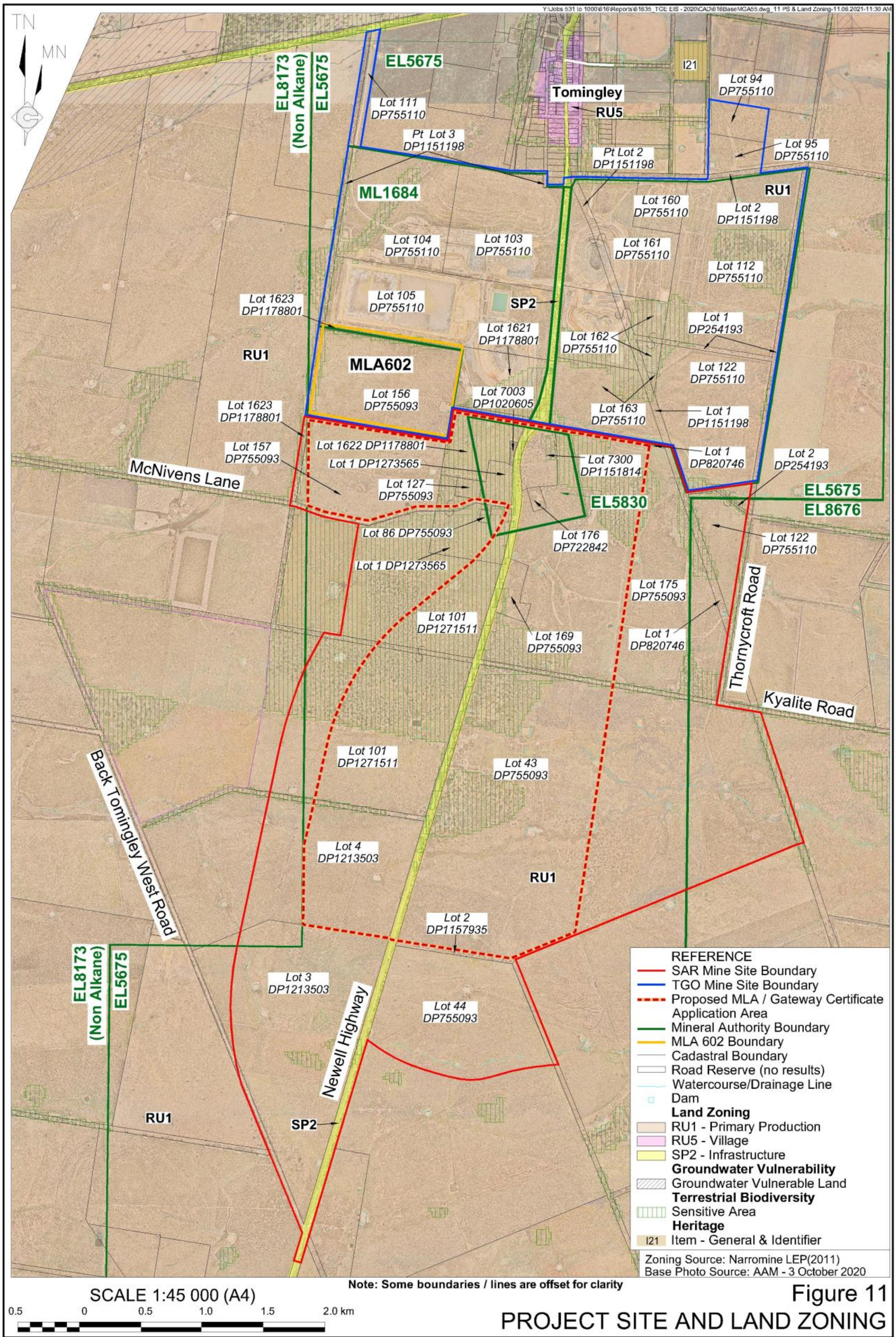


Figure 11
PROJECT SITE AND LAND ZONING

3.3 PROJECT SITE LAYOUT

Figures 2, 3 and **12** present the proposed layout of the Project.

3.4 PROJECT DESCRIPTION

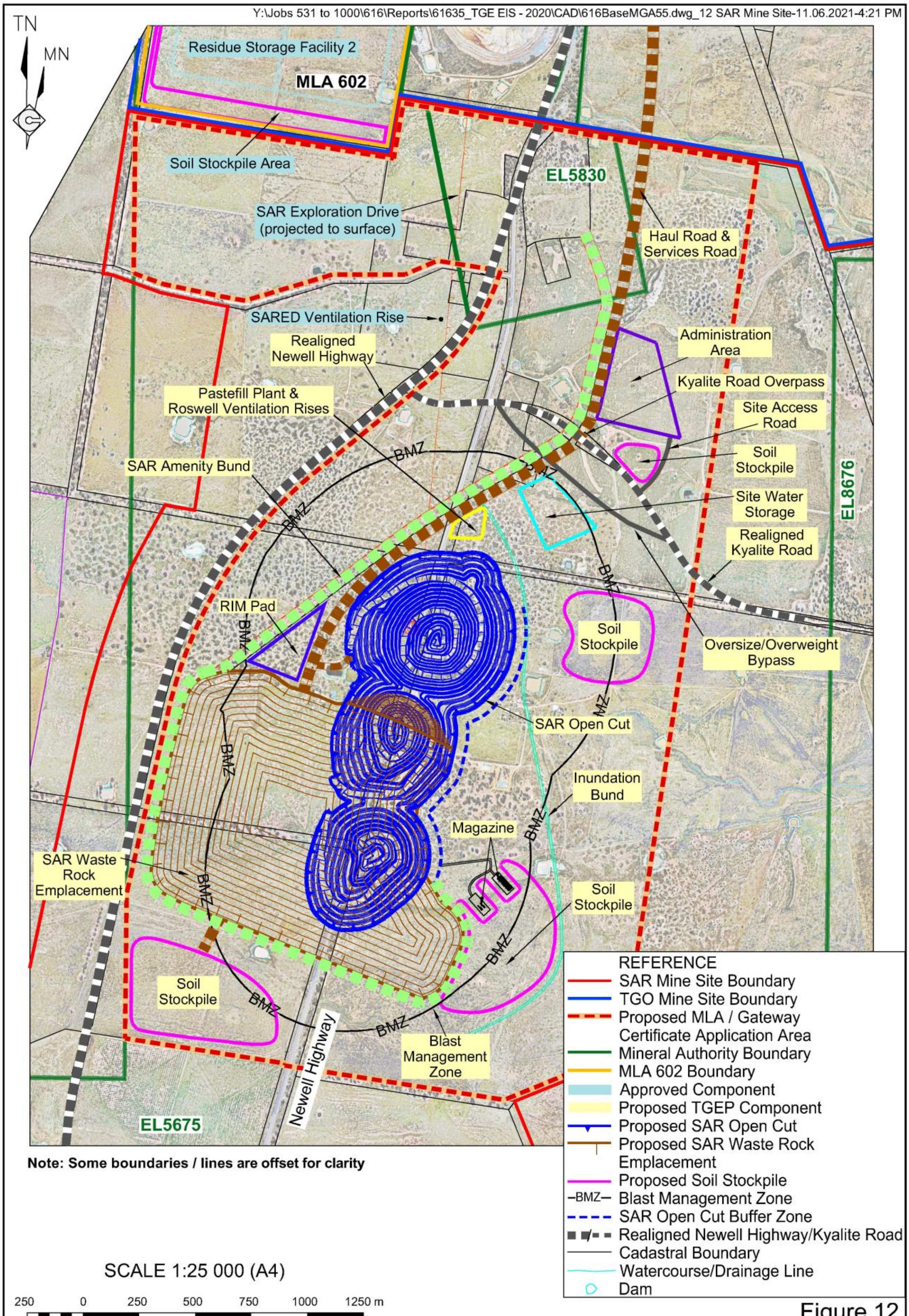
3.4.1 Introduction

This subsection provides a description of the proposed activities within the Project Site. Activities approved under MP 09_0155 are described in Section 1.5.3 and would continue under any new development consent issued for the Project. The proposed activities are described in sufficient detail to allow the reader to gain a general understanding of the Project. The EIS to accompany the application for development consent will include additional detailed descriptions of the proposed activities. Detailed design, scheduling and environmental assessment work is ongoing and the final Project description presented in the EIS may vary slightly from that presented in this document

3.4.2 Site Establishment

Site establishment activities would include the following.

- Key boundaries and locations would be marked on the ground and recorded on relevant site construction plans and documents.
- Existing infrastructure within the disturbance area, including communication lines, powerlines, fences, buildings and sheds would be progressively demolished and/or relocated.
- Additional services required for the Project, including powerlines, communication lines and pipelines would be established.
- Erosion and sediment control structures, including clean and dirty water structures and the Inundation Bund, would be established.
- Suitable fences, including warning signs, would be established to separate active mining areas from areas that would continue to be used for agricultural purposes.
- Construction laydown and equipment parking areas, as well as office/amenity buildings would be established.
- Vegetation clearing followed by stripping and stockpiling of soil would be undertaken.
- Borrow pits would be established within the footprint of the Waste Rock Emplacement and / or SAR Open Cut for the supply of construction materials.
- Construction of the Haul Road, Services Road, SAR Amenity Bund, Administration Area (including offices, workshops, diesel store, equipment parking, vehicle washdown bay, etc), internal site roads, hard stands, explosives magazines, water storages, and other site infrastructure.



Base Photo Source: AAM - 3 October 2020
Source: Tomingley Gold Operations Pty Limited

Figure 12
SAR MINE SITE LAYOUT

3.4.3 Realigned Public Roads

The Project would require realignment of the following public roads.

- Newell Highway and intersections with Kyalite Road, McNivens Lane and Back Tomingley West Road.
- Kyalite Road, including an overpass over the Haul Road and Services Road.

The current alignment of the Newell Highway is within the proposed SAR Open Cut. Open cut mining operations require that the Highway be realigned (**Figure 12**). The Applicant proposes to realign the Highway approximately 1km to the west. The proposed realigned Highway would be constructed on a like-for-like basis to the standard required by Transport for NSW. The realigned section of the Highway would be approximately 462m longer than the existing section of the Highway and would add 14 seconds of travel time. In order to compensate for this minor additional travel time, the Applicant proposes the following additional design features.

- Flood protection for a 5% Annual Exceedance Probability (AEP) rainfall event.[3] The existing Highway floods every 3 to 4 years (25% to 33% AEP).
- Additional safety features, including wire-rope protection on the centre line and elsewhere, removal of four farm driveways in 110km/hr zone and removal of roadside advertising signs.

In addition, modified intersections would be required for the realigned Kyalite Road, McNivens Lane and Back Tomingley West Road. The intersection of the Highway and Kyalite Road would include dedicated right and left turn lanes for traffic entering and leaving Kyalite Road. The intersections of McNivens lane and Back Tomingley West Road would be constructed to a Basic Auxiliary Left / Basic Auxiliary Right standard. In addition, the location of the intersection of the Highway and Back Tomingley West Road would be relocated to the north to permit appropriate sight distances for the new intersection.

Kyalite Road is also within the footprint of the SAR Open Cut. As a result, the Applicant would realign Kyalite Road to the north and would construct an overpass over the Haul and Services Roads. The realigned road would be sealed from the intersection with the Newell Highway a point east of the Site Access Road. The realigned road would be constructed to the standard required by Narromine Shire Council and in consultation with users of the road. A bypass would be constructed to permit any vehicles that are unable to use the overpass to be escorted across the Haul Road and Services Road.

Concept designs for the realigned Newell Highway and Kyalite Road have been provided to Transport for NSW and Narromine Shire Council and consultation with each will be ongoing.

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[3] The Annual Exceedance Probability is the probability of a rainfall event occurring in a 12-month period. A 5% AEP event would have a 1 in 20 chance of occurring in a given year. A 25% AEP event would have a 1 in 4 chance of occurring in a given year.

3.4.4 Mining Operations

3.4.4.1 Open Cut Mining

Open cut mining operations would commence in the southern section of the SAR Open Cut. Mining of the near surface material would be undertaken using conventional free dig, load and haul techniques. Once more competent material is exposed, it would be extracted using conventional drill, blast, load and haul techniques. Open cut ore would be transported to the TGO Mine Site via the proposed Haul Road. Alternatively, ore may be stockpiled within the Run-in-Min (RIM Pad) from where it would be transported to the TGO Mine Site via the proposed Haul Road.

Waste rock would be placed into the SAR and Caloma Waste Rock Emplacements (see Section 3.4.6).

Scheduling of open cut mining operations is in progress and the proposed schedule and rate of open cut mining will be presented in the EIS.

3.4.4.2 Underground Mining

Underground mining operations would be undertaken using the approved SAR Exploration Drive (SARED) (**Figures 2** and **12**). The drive would permit access from the Wyoming 1 underground workings to the SAR deposits. The drive and a single ventilation rise were approved under the *Mining Act 1992* as exploration-related activities by the Resources Regulator on 7 May 2020 (see Section 1.5.4). That approval permits exploration drilling from underground and extraction of a bulk sample.

Following receipt of development consent, the SAR Exploration Drive would become the SAR Production Drive. Additional development for production purposes would be undertaken using traditional jumbo-based drill, blast, load and haul techniques. Stoping operations would indicatively rely upon long hole open stoping or similar methods. No surface subsidence, with the possible exception of breakthrough into the base of the open cuts, would occur.

As this stage, the Applicant has only designed underground mining operations within the Roswell deposit. Underground mining withing the San Antonio deposit would also be undertaken. In addition, mineralisation within the SAR deposits remains open at depth. As a result, it is very likely that additional underground ore will be identified.

Ore would initially be transported to the TGO Mine Site via the underground drive and Wyoming 1 Portal. Ore transported via the Wyoming 1 Portal would be directly transferred to the ROM Pad using underground haul trucks. An additional portal may be established within the SAR Open Cut and ore may be bought to the surface via the SAR Portal and stockpiled within the Run-in-Min (RIM Pad) from where it would be transported to the TGO Mine Site as described in Section 3.4.5.

Waste rock would be used to backfill completed stopes or would be transported to surface via the Wyoming 1 or SAR Portals and placed within surface waste rock emplacements.

Underground mining operations would be supported by the following surface infrastructure (**Figure 13**).

- The approved SARED Ventilation Rise.
- Proposed Roswell (ROS) Ventilation Rises.
- Additional ventilation rises as required within disturbed sections of the SAR Mine Site.
- A Paste Fill Plant.
- Services, including power, water and compressed air.

Pastefill is tailings/residue mixed with a binding agent such as cement and is used to backfill and stabilise completed underground stopes. Dewatered tailings/residue would be transported to the Pastefill Plant from the TGO Mine Site via the Services Road before being mixed with the binding agent and pumped underground. Once cured, the pastefill would have a consistency similar to cement and would enable extraction of ore that would otherwise be unable to be extracted.

Scheduling of underground mining operations is in progress and the proposed schedule and rate of underground mining will be presented in the EIS.

3.4.5 Transportation Operations

A Haul Road and Services Road would be constructed between the Caloma 2 and SAR Open Cuts (**Figures 2, 12** and **14**). The Haul Road would permit surface haul trucks to transport ore and waste rock from the SAR Open Cut to the TGO Mine Site. The road would be sufficiently wide to permit two-way use by haul trucks travelling in opposite directions.

Open Cut ore, including ore from any portal within the SAR Open Cut, would be transported to the ROM Pad via the Haul Road and existing Newell Highway Underpass using haul trucks or road trucks. Alternatively ore, including low grade ore, may be transported via the Haul Road and temporarily stockpiled within the footprint of the Caloma Waste Rock Emplacement.

Underground ore transported to surface via the Wyoming 1 Portal would be transported directly to the ROM Pad using underground haul trucks.

Waste rock from the SAR Open Cut would be transported via the Haul Road and placed within the Caloma Waste Rock Emplacement. Alternatively waste rock from the SAR Open Cut would be transported to the SAR Waste Rock Emplacement, including in-pit and out-of-pit placement.

A Services Road would be constructed adjacent to the Haul Road and would permit use by smaller vehicles, including light vehicles, service vehicles and heavy vehicles transporting tailings/residue to the Pastefill Plant. The Services Road would be sufficiently wide to permit two-way use by vehicles travelling in opposite directions. The Services Road would be separated from the Haul Road by a bund that would prevent vehicles crossing between the two roads.

Where the Haul Road and Services Road cross the proposed realigned Kyalite Road, an overpass for vehicles using Kyalite Road would be constructed.

Finally, an amenity bund would be constructed on the western side of the Haul Road. The SAR Amenity Bund would be constructed in a manner that would ensure that views of active sections of the SAR Mine Site would, to the extent practicable, be limited for motorists using the Newell Highway. This would limit the potential for driver distraction on the Highway.

In addition to constructing the Haul Road and Services Road, the Applicant would realign Kyalite Road. SAR personnel and consumables required for the proposed SAR operations would access the SAR Mine Site via the Newell Highway, the realigned Kyalite Road and the proposed Site Access Road.

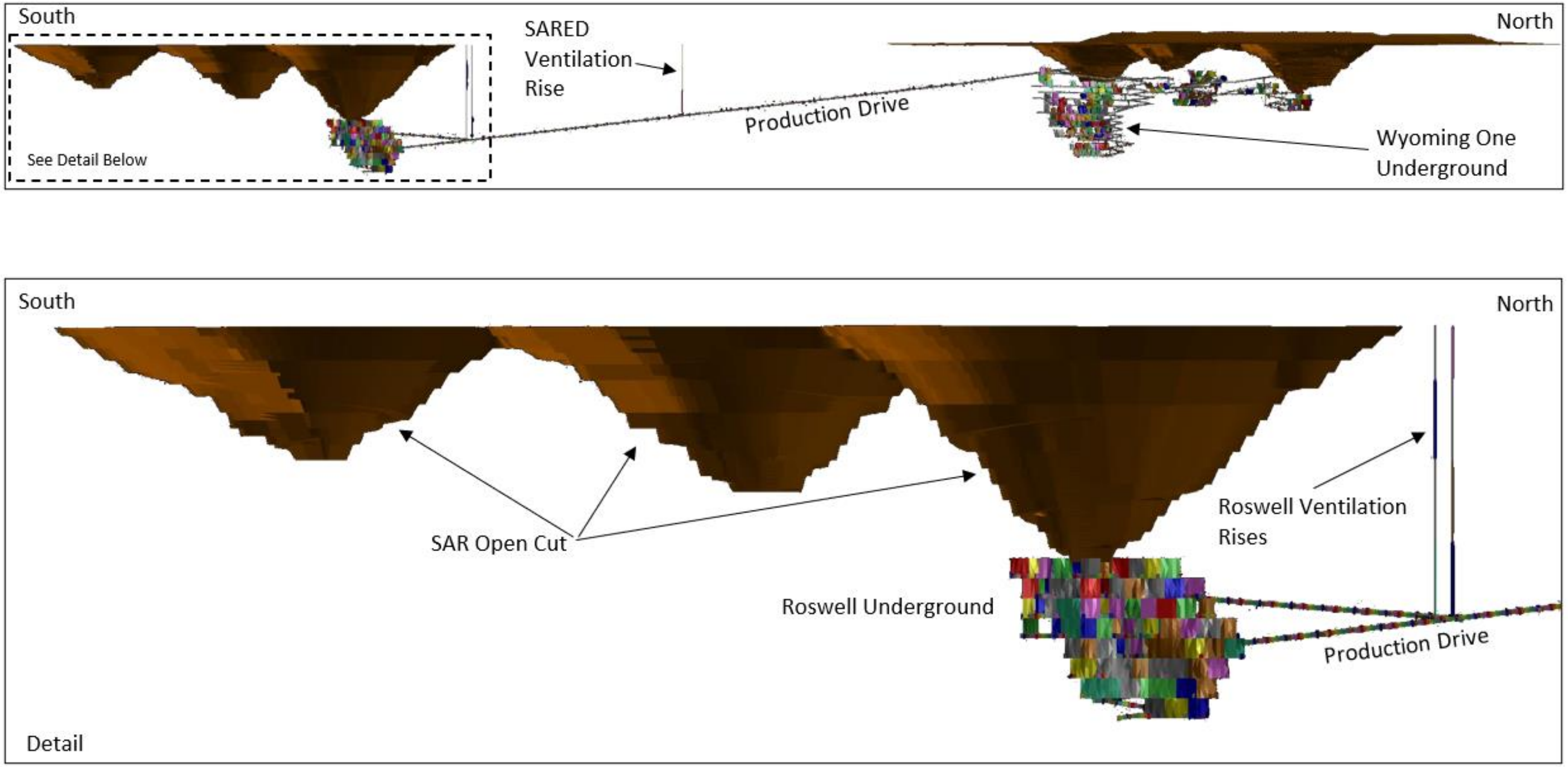

Figure 13
Proposed Underground Mining Operations

Source: Tomingley Gold Operations Pty Ltd

Figure 14
Haul Road and Services Road

Source: Tomingley Gold Operations Pty Ltd

3.4.6 Waste Rock Management

Waste rock from the SAR Open Cut would initially be used for site establishment operations, including construction of the SAR Amenity Bund. Subsequently, waste rock would be transported to the TGO Mine Site via the Haul Road and placed into the Caloma and Caloma 2 Open Cuts which would be completely backfilled, with a small hill constructed over the backfilled open cuts. Subsequently, waste rock would be placed into the SAR Waste Rock Emplacement, initially in an out-of-pit location, with in-pit placement of waste rock commencing following completion of the southern and central sections of the SAR Open Cut. The southern and central sections of the SAR Open Cut would also be completely backfilled to form an integrated SAR Waste Rock Emplacement.

During waste rock placement operations in the SAR Waste Rock Emplacement, the Applicant would construct, shape and rehabilitate the outer sections of the Waste Rock Emplacement initially to minimise noise emissions and ensure that operations are, to the extent practicable, not visible from locations to the west of the Project Site.

The SAR and Caloma Waste Rock Emplacements would be designed as geomorphic landforms, with side slopes substantially less steep than the existing Waste Rock Emplacements within the TGO Mine Site. The proposed Waste Rock Emplacements would also, to the extent practicable, be designed without benches, steps or a large, flat upper surface. The intention of the design of the Waste Rock Emplacement would be to replicate a natural landform that would be less visually intrusive than “traditional” Waste Rock Emplacement designs. Design principles are currently in development by specialist landform design consultants, Landloch Pty Ltd, based on site-specific material sampling and testing and will be presented in the EIS.

3.4.7 Processing Operations and Residue Management

Ore would be processed using the existing Processing Plant. The Applicant would add a second (primary) ball mill between the existing crushing circuit and the existing (secondary) ball mill. This would permit the Processing Plant to achieve the approved production rate of 1.5Mtpa when processing hard rock. However, the SAR deposits include a substantial proportion of oxide ore. As a result, production rates when processing this softer material would increase to 1.75Mtpa.

The Project would require additional capacity to store residue/tailings. RSF2 was approved to Stage 2 or a maximum elevation of 272m AHD. Development consent would be sought to increase the height of RSF2 to incorporate Stage 9 of RSF2, with a maximum elevation of 286m AHD. This would result in RSF2 having approximately the same final elevation as the approved RSF1.

3.4.8 Water Management

The Project Site and surrounding areas generally slope gently from east to west, with occasional low rises. Surface water flows are typically limited to small, indistinct watercourses. Surface water primarily flows east to west as sheet flow, with water pooling on the eastern side of the current Newell Highway. In extreme rainfall events, the Highway floods, typically once every 3 to 4 years.

Surface water diversion structures would be constructed during the initial site establishment phase of the Project. The Applicant would construct a series of low, grass covered contour banks to the east of the proposed disturbance area. The contour banks would be designed to convey water at non-erosive velocities, with the contour banks overtopping in rainfall events that exceed their design criteria. A Inundation Bund would be constructed to the east of the SAR Open Cut to provide protection from extreme rainfall events.

Culverts would be installed under the relocated Newell Highway, Haul Road and Services Road and gaps would be left in the SAR Amenity Bund. Where existing culverts under the section of the Newell Highway to be decommissioned are inadequate, sections of the decommissioned road would be removed.

Potentially sediment-laden or dirty water would be retained within the disturbed section of the Mine Site and would be used for mining-related purposes. Dirty water would not be permitted to be discharged from site.

Water removed from both the open cut and underground workings would be pumped to a surface storage facility and would be used for mining-related purposes. Mine water would not be permitted to be discharged from site.

A pipeline would be installed between the TGO and SAR Mine Sites to allow transfer of water as required.

3.4.9 Hours of Operation and Project Life

The Project would operate 24 hours, 7 days per week.

The Applicant, in an announcement to the Australian Stock Exchange on 3 June 2021, identified that based on current known mineral resources, mining operations are likely to be undertaken until at least February 2031. Given that the San Antonio underground resource, additional ore likely to be identified down dip and along strike of the known SAR and TGO rsources has yet to be included in the mining schedule, the Applicant proposes to seek development consent for the Project until 31 December 2032.

3.4.10 Final Landform, Land Use, Rehabilitation and Mine Closure

The approved and proposed final landform would include the following (**Figures 2, 3** and **12**).

- Two bunded and fenced final voids, namely the approved and existing Wyoming 1 Open Cut and a proposed void within the northern section of the SAR Open Cut.

- Three fully backfilled open cuts, namely the approved Wyoming 3 and proposed Caloma and Caloma 2 Open Cuts.
- Three shaped and rehabilitated Waste Rock Emplacements, namely the approved and existing WRE2 and WRE3 and the proposed SAR Waste Rock Emplacement.
- Water management structures.
- The realigned Newell Highway and Kyalite Road would be retained. The Haul Road overpass on Kyalite Road would be removed or retained in consultation with Narromine Shire Council.

All infrastructure not required for the final land use would be removed or reduced in size, indicatively including the following.

- The Haul Road Amenity Bund and Haul Road would be removed. The Services Road would be reduced in size to facilitate ongoing management of the land post-mining.
- The Administration Area would be largely removed, with those structures suitable for the final land use retained. This may include sheds and limited hardstand areas.
- The magazines, RIM Pad, Pastefill Plant and other infrastructure would all be removed.
- All entrances to the underground workings would be sealed.

The final land use would comprise a mixture of agriculture and nature conservation.

Rehabilitation would be undertaken progressively, with the outer face of the SAR Waste Rock Emplacement rehabilitated as each lift is established, indicatively annually. throughout the life of the Project. Rehabilitation of other sections of the Project Site would be undertaken at the end of mine life. A *Rehabilitation Management Plan* describing the proposed rehabilitation operations and providing detailed completion criteria would be prepared in accordance with the guidelines relevant at the time.

Following completion of all rehabilitation operations and confirmation that the relevant completion criteria have been achieved, the Applicant would relinquish the Mining Lease.

3.5 ALTERNATIVES CONSIDERED

3.5.1 Introduction

The design and layout of the Project as described in this document is the result of over 12 months of research, technical investigations, consultation and high-level design. In addition, the Applicant is continuing to evaluate the Project and will continue to assess and refine the design and layout throughout preparation of the EIS. The Applicant is also engaging in detailed consultation with a range of government agencies and the community. As a result, the EIS to be prepared to support the application for development consent will include a detailed description and analysis of alternatives considered by the Applicant and the reasons why the Project, as proposed, is the preferred alternative. Notwithstanding the above, the following alternatives have been or are currently under consideration.

3.5.2 Underground vs open cut mining operations

The Project includes both open cut and underground operations. The Project description presented in Section 3.4 is, based on the current understanding of the deposits, market conditions and mining costs as well as the most efficient and effective mining scenario.

The Applicant, has considered the option of an underground-only mining operation. This would have the following advantages.

- No relocation of the Newell Highway or Kyalite Road.
- No surface waste rock emplacement.
- Reduced disturbance of agricultural land and native vegetation.
- No requirement to remove “Rosewood” or “Kenilworth” homesteads.
- Reduced noise, air quality, blasting and visual impacts.

This option would also result in no final void associated with the SAR Open Cut. However, there would also be no opportunity to backfill the Caloma 1 and Caloma 2 Open Cuts. As a result, avoiding a SAR Open Cut final void is neither an advantage nor a disadvantage compared with the Project as proposed.

Notwithstanding the above, an underground only option would have the following disadvantages.

- Substantially reduced gold production.
- Sterilisation of a State-owned resource, in particular oxide and lower grade ore that would not be amenable to underground mining.
- Substantially reduced workforce and economic contributions and associated benefits.
- Substantially reduced royalties as a result of reduced gold production.
- Substantially reduced internal rate of return for the Applicant, thereby reducing the economic resilience of the Company and potentially impacting on the Director’s duty to the shareholders.

Similarly, open cut mining operations only would result in deeper ore not being extracted, with similar sub-optimal outcomes for the State and the Applicant.

In light of the above, the Applicant will continue to assess the optimal combination of open cut and underground mining operations, including the point of transition between open cut and underground mining methods in order to maximise utilisation of the resources.

3.5.3 Design and Location of the Waste Rock Emplacements

The Project would require removal of large volumes of waste rock. A substantial proportion of this material would be placed in-pit within the Caloma 1 and 2 Open Cuts and a section of the proposed SAR Open Cut, with additional waste rock to be placed out-of-pit. The Applicant originally considered multiple out-of-pit options for out-of-pit waste rock emplacements, including substantial emplacements to the east of the SAR Open Cut. Following identification of high value native vegetation within the footprint of the proposed eastern waste rock emplacements, the SAR Waste Rock Emplacement was modified to minimise the area of native vegetation to be disturbed.

Alternate designs for the final Waste Rock Emplacements has also been assessed, including "traditional" bench and batter designs similar to those used for Waste Rock Emplacements 2 and 3 within the TGO Mine Site, and geomorphic designs, with final slopes substantially flatter than the current Waste Rock Emplacement 2 and 3 landforms. "Traditional" waste rock emplacement designs have the advantage of disturbing less land and being lower than geomorphic designs, but are more prone to soil erosion and look less "natural" than geomorphic designs. The Applicant has determined to use a geomorphic design for the proposed waste rock emplacements, with studies ongoing to determine final design criteria.

3.5.4 Location of Relocated Public Roads

Newell Highway

The proposed SAR Open Cut would impact on the Newell Highway and Kyalite Road (**Figures 2** and **12**).

The proposed realignment of the Newell Highway has been the subject of extensive consultation with Transport for NSW (TfNSW), with the current proposed alignment version 18 of that design. Earlier versions included:

- realignment to the east of the SAR Open Cut (rejected because of the potential for mineralisation in that area); and
- various alignments to the west of the SAR Open Cut to optimise curve radii and road safety within the northern section of the realigned Highway.

The proposed alignment has been agreed with TfNSW and is the subject of ongoing discussion in relation to the required Work Authority Deed. Additional refinements to the Highway design and associated intersections will continue to be made through the detailed design process.

Kyalite Road

Two options for realignment of Kyalite Road were considered as follows.

- Option 1 – realignment as shown on **Figures 2** and **12**.
- Option 2 – diversion of Kyalite Road via Thornycroft Road, the eastern section of the TGO Mine Site and Cemetery Road, with the intersection with the Newell Highway within the village of Tomingley in a 50km/h zone.

Option 2 would have the following advantages compared with Option 1.

- Substantially lower construction costs as no overpass over the Haul Road and Services Road would be required.
- The intersection with the Newell Highway would be within a 50km/h zone, resulting in reduced risk of serious accident.

Option 2 would however result in an increased travel distance of up to 10km compared with Option 1 for users of Kyalite Road travelling south on the Newell Highway towards Peak Hill.

The Applicant consulted with users of Kyalite Road and the overwhelming preference was for Option 1. As a result, the Applicant has adopted that Option for the Project. Additional refinements to the road design will continue to be made through the detailed design process.

3.5.5 Consequences of not Proceeding with the Project

Should the Project not proceed or not receive all required approvals.

- Tomingley Gold Operations would likely cease operations at the end of 2025.
- Additional land would not be disturbed by mining and would continue to be used for agricultural activities.
- The Newell Highway and Kyalite Road would not need to be realigned.
- Noise, vibration, air quality, traffic and related amenity impacts would not occur.
- No surface waste rock emplacement would be required.
- No requirement to remove “Rosewood” or “Kenilworth” homesteads.

Notwithstanding the above, should the Project not proceed, the following benefits would not eventuate.

- The recoverable gold resource would not be mined. Such an outcome would be contrary to the objects of the NSW Government and the Applicant’s obligation to maximise resource utilisation.
- The option to extend the life of TGO by a further 7 years would be lost, resulting in a loss of employment, contributions to economic activity and payment of taxes and royalties over that period.

4 STATUTORY CONTEXT

Tables 3, 4 and **5** present an overview of the key statutory requirements, preconditions and mandatory considerations for the Project. Each of these matters will be addressed in the EIS.

Table 3
Key Statutory Requirements

Page 1 of 2

Matter	**Project Relevance**
Power to grant consent	The Project would be classified as State Significant Development under Clause 5(1)(c) of Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011* as the Capital Investment Value would be more than $30 million. The consent authority for the Project is the Minister for Planning and Public Spaces, unless the following triggers identified in Clause 8A(1) of the *State Environmental Planning Policy (State and Regional Development) 2011* apply, in which case, the Independent Planning Commission would be the consent authority. • Narromine Shire Council provides a submission objecting to the application. • Objections are received from 50 persons or more. • The Applicant has disclosed a reportable political donation of $1,000 or more. The Applicant understands that in the circumstances where the above triggers are not met, the Minister has delegated their powers to determine the application to a senior officer of the Department of Planning, Industry and Environment.
Permissibility	**Figure 11** presents the Project Site and land zoning under the *Narromine Local Environmental Plan 2011* (Narromine LEP). All land within the Project Site is zoned: • RU 1 – Primary Production. • SP2 – Infrastructure. Open cut and underground mining would be undertaken within both these zones and is permissible as described below. • Open cut mining is permissible with consent within land zoned RU1 under the Narromine LEP. • Open cut mining is permissible within land zoned SP2 under the terms of Clause 7(1)(b)(i) of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP) which permits mining on any land where agriculture is permissible. Aquaculture, a type of agriculture, is permissible with consent on land zoned SP2 under the Narromine LEP. It is anticipated that the land the subject of the proposed realigned Newell Highway would be rezoned SP2 – Infrastructure and that land the subject of the section of the Newell Highway that would be decommissioned would be rezoned RU1 – Primary Production. • Underground mining is permissible with consent on any land under Clause 7(1)(a) of the Mining SEPP. As a result, the Project is permissible with consent.
Other approvals (Consistent Approvals)	The following approvals would be required for the Project, and once Development Consent has been received, cannot be refused and must be consistent with that approval consistent with Section 4.42 of the EP&A Act.. • Environment Protection Licence (EPL) under the *Protection of the Environment Operations Act 1997*. EPL20169 is currently held for TGO. That licence would be required to be modified to incorporate additional land associated with the SAR Mine Site.

Table 3 (Cont'd)
Key Statutory Requirements

Page 2 of 2

Matter	Project Relevance
Other approvals (Consistent Approvals) *(Cont'd)*	• Mining Lease under the *Mining Act 1992.* The Applicant currently holds ML1684 and has applied for MLA602 for TGO (**Figure 2**). A new Mining Lease would be required over a section of the SAR Mine Site (shown by a red dashed line on orange background on **Figure 2**). The proposed Mining Lease Application (MLA) area occupies sections of Exploration Licence (EL) 5830 and EL5675, both held by Alkane Resources Limited, the Applicant's parent company. • A consent under section 138 of the Roads Act 1993 Permits (and an associated Works Authority Deed) will be required for the relocation of the Newell Highway and Kyalite Road, as well as modifications to the intersections between the Highway and Back Tomingley West Road and McNivens Lane from Transport for NSW and/or Narromine Shire Council respectively.
Other approvals (EPBC Act Approvals)	Approval under the EPBC Act is unlikely to be required for the following reasons. • Preliminary biodiversity assessments indicate that the Project would not result in significant adverse impacts to any Matter of National Environmental Significance. • The application for a Gateway Certificate is not required to be referred to the Commonwealth under the *National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development* because the application does not relate to a large coal mine or a coal seam gas.
Other approvals (Not integrated into the SSD Assessment)	The following additional approvals will be required. • *A Gateway Certificate* is required under Clause 17F of the Mining SEPP because sections of the proposed MLA may be classified as Biophysical Strategic Agricultural Land (BSAL) in accordance with the *Strategic Regional Land Use Policy – Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land.* An application for a Gateway Certificate is in preparation and the Certificate is required to be issued prior to submission of the EIS. • *Water Management Act 2000* Approvals – Bore licences – Additional licences for monitoring bores will be required – Controlled works approval – Additional approvals will be required for works on waterfront land. – Water Supply Works – Additional approval will be required for a proposed new water supply bore in the vicinity of Narromine. – Water Access Licence – An additional licence will be required for water sourced from a new water supply bore in the vicinity of Narromine.
Other approvals (Not required)	The following approvals will not be required because of the operation of Section 4.41 of the EP&A Act. • Aboriginal Heritage Impact Permit under Section 90 of the *National Parks and Wildlife Act 1974.* • Water supply work approval under Section 90(2) of the *Water Management Act 2000* for the proposed mining voids.

Table 4
Pre-conditions to Granting Approval

Page 1 of 8

Statutory Reference	Pre-condition	Relevance
Biodiversity Conservation Act 2016 (BC Act)		
Section 7.14	If the Minister for Planning is of the opinion that proposed SSD is likely to have serious or irreversible impacts on biodiversity values, the Minister: (a) is required to take those impacts into consideration, and (b) is required to determine whether there are any additional and appropriate measures that will minimise those impacts if consent or approval is granted.	The Project would result in removal of native vegetation and, as a result, a Biodiversity Development Assessment Report will be prepared to assess the anticipated Project-related impacts.
Narromine Local Environmental Plan 2011 (Narromine LEP)		
Clause 2.3(2)	The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.	Mining is permissible on land zoned as RU1 and SP2 under the Narromine LEP. The objectives of each zone will be assessed in the EIS
Clause 6.2(3)	Before granting development consent for earthworks (or for development involving ancillary earthworks), the consent authority must consider the following matters: (a) the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality of the development, (b) the effect of the proposed development on the likely future use or redevelopment of the land, (c) the quality of the fill or the soil to be excavated, or both, (d) the effect of the proposed development on the existing and likely amenity of adjoining properties, (e) the source of any fill material and the destination of any excavated material, (f) the likelihood of disturbing relics, (g) the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area, (h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.	The Project would result in disturbance of land. The matters identified in this Clause will be addressed in the EIS.

Table 4 (Cont'd)
Pre-conditions to Granting Approval

Page 2 of 8

Statutory Reference	Pre-condition	Relevance
Narromine Local Environmental Plan 2011 (Narromine LEP) (Cont'd)		
Clause 6.3(3)	Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development— (a) is designed to maximise the use of water permeable surfaces on the land, having regard to the soil characteristics affecting on-site infiltration of water, and (b) includes, if practicable, on-site stormwater retention for use as an alternative supply to mains water, groundwater or river water, and (c) avoids any significant impacts of stormwater runoff on adjoining downstream properties, native bushland and receiving waters, or if that impact cannot be reasonably avoided, minimises and mitigates the impact.	The Project would result changed surface water flows. The matters identified in this Clause will be addressed in the EIS.
Clause 6.4(3)	Before determining a development application for development on land to which this clause applies, the consent authority must consider whether or not the development— (a) is likely to have any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and (b) is likely to have any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and (c) has any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and (d) is likely to have any adverse impact on the habitat elements providing connectivity on the land.	The Project would result in removal of native vegetation and, as a result a Biodiversity Development Assessment Report will be prepared to assess the anticipated Project-related impacts.
Clause 6.4(4)	Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that— (a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or (b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or (c) if that impact cannot be minimised—the development will be managed to mitigate that impact.	The Project would result in removal of native vegetation and, as a result a Biodiversity Development Assessment Report will be prepared to assess the anticipated Project-related impacts.

Table 4 (Cont'd)
Pre-conditions to Granting Approval

Page 3 of 8

Statutory Reference	Pre-condition	Relevance
Narromine Local Environmental Plan 2011 (Narromine LEP) (Cont'd)		
Clause 6.5(3)	Before determining a development application to carry out development on land to which this clause applies, the consent authority must consider whether or not the development— (a) is likely to have any adverse impact on the following— (i) the water quality and flows within the watercourse, (ii) aquatic and riparian species, habitats and ecosystems of the watercourse, (iii) the stability of the bed and banks of the watercourse, (iv) the free passage of fish and other aquatic organisms within or along the watercourse, (v) any future rehabilitation of the watercourse and its riparian areas, and (b) is likely to increase water extraction from the watercourse.	The Project would result in disturbance of watercourses. The matters identified in this Clause will be addressed in the EIS.
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP)		
Clause 12AB	(2) The matters set out in this clause are identified as non-discretionary development standards for the purposes of section 4.15(2) and (3) of the Act in relation to the carrying out of development for the purposes of mining. Note - The development standards do not prevent a consent authority from imposing conditions to regulate project-related noise, air quality, blasting or ground vibration impacts that are not the subject of the development standards. (3) **Cumulative noise level** The development does not result in a cumulative amenity noise level greater than the recommended amenity noise levels, as determined in accordance with Table 2.2 of the Noise Policy for Industry, for residences that are private dwellings. (4) **Cumulative air quality level** The development does not result in a cumulative annual average level greater than 25 µg/m3 of PM10 or 8 µg/m3 of PM2.5 for private dwellings. (5) **Airblast overpressure** Airblast overpressure caused by the development does not exceed— (a) 120 dB (Lin Peak) at any time, and (b) 115 dB (Lin Peak) for more than 5% of the total number of blasts over any period of 12 months, measured at any private dwelling or sensitive receiver.	Each of these matters will be addressed in the EIS

Table 4 (Cont'd)
Pre-conditions to Granting Approval

Page 4 of 8

Statutory Reference	Pre-condition	Relevance
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP) (Cont'd)		
Clause 12AB (Cont'd)	(6) **Ground vibration** Ground vibration caused by the development does not exceed— (a) 10 mm/sec (peak particle velocity) at any time, and (b) 5 mm/sec (peak particle velocity) for more than 5% of the total number of blasts over any period of 12 months, measured at any private dwelling or sensitive receiver. (7) Aquifer interference Any interference with an aquifer caused by the development does not exceed the respective water table, water pressure and water quality requirements specified for item 1 in columns 2, 3 and 4 of Table 1 of the Aquifer Interference Policy for each relevant water source listed in column 1 of that Table.	
Clause 12	Before determining an application for consent for development for the purposes of mining the consent authority must: (a) consider: (i) the existing uses and approved uses of land in the vicinity of the development, and (ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses if land in the vicinity of the development, and (iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and (b) evaluate and compare the respective public benefits of the development and the land uses referred to above, and (c) evaluate any measure proposed by the applicant to avoid or minimise any incompatibility.	The Project Site is surrounded by agricultural land and is bisected by the Newell Highway. The matters identified in this Clause will be addressed in the EIS.
Clause 12A(2)	Before determining an application for consent for SSD for the purposes of mining, the consent authority must consider any applicable provisions of the voluntary land acquisition and mitigation policy, and, in particular: (a) any applicable provisions of the policy for the mitigation or avoidance of noise or particulate matter impacts outside the land on which the development is to be carried out, and (b) any applicable provisions of the policy relating to the developer making an offer to acquire land affected by those impacts.	The air quality impact assessment and noise impact assessment for the Project will identify if the voluntary land acquisition and mitigation policy applies to the Project.

Table 4 (Cont'd)
Pre-conditions to Granting Approval

Page 5 of 8

Statutory Reference	Pre-condition	Relevance
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP) (Cont'd)		
Clause 13(2)	Before determining an application to which this clause applies, the consent authority must: (a) consider: (i) the existing uses and approved uses of land in the vicinity of the development, and (ii) whether or not the development is likely to have a significant impact on current or future extraction or recovery of minerals, petroleum or extractive materials (including by limiting access to, or impeding assessment of, those resources), and (iii) any ways in which the development may be incompatible with any of those existing or approved uses or that current or future extraction or recovery, and (b) evaluate and compare the respective public benefits of the development and the uses, extraction and recovery referred to above, and (c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility.	The Project Site is surrounded by agricultural land and is bisected by the Newell Highway. The matters identified in this Clause will be addressed in the EIS.
Clause 14(1)	Before granting consent for development for the purposes of mining, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner, including conditions to ensure the following: (a) that impacts on significant water resources, including surface and groundwater resources, are avoided, or are minimised to the greatest extent practicable, (b) that impacts on threatened species and biodiversity, are avoided, or are minimised to the greatest extent practicable, (c) that greenhouse gas emissions are minimised to the greatest extent practicable.	The EIS will include an assessment of water resources, threatened species and biodiversity and greenhouse gas emissions.
Clause 14(2)	In determining a development application for development for the purposes mining, the consent authority must consider an assessment of the greenhouse gas emissions (including downstream emissions) of the development, and must do so having regard to any applicable State or national policies, programs or guidelines concerning greenhouse gas emissions.	The EIS will include an assessment of greenhouse gas emissions.
Clause 15(1)	Before granting consent for development for the purposes of Mining, the consent authority must consider the efficiency or otherwise of the development in terms of resource recovery.	The EIS will include an assessment of the efficiency of the recovery of the resource.
Clause 15(2)	Before granting consent for the development, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at optimising the efficiency of resource recovery and the reuse or recycling of material.	The EIS will include an assessment of the efficiency of the recovery of the resource and reuse of materials.

Table 4 (Cont'd)
Pre-conditions to Granting Approval

Page 6 of 8

Statutory Reference	Pre-condition	Relevance
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP) (Cont'd)		
Clause 16(1)	Before granting consent for development for the purposes of mining that involves the transport of materials, the consent authority must consider whether or not the consent should be issued subject to conditions that do any one or more of the following: (a) require that some or all of the transport of materials in connection with the development is not to be by public road, (b) limit or preclude truck movements, in connection with the development, that occur on roads in residential areas or on roads near to schools, (c) require the preparation and implementation, in relation to the development, of a code of conduct relating to the transport of materials on public roads.	The Project would transport waste rock and ore via the internal Haul Road. Vehicle movements on public roads would be limited to the delivery of consumables and transportation of personnel. A Driver's Code of Conduct would be prepared for the Project
Clause 17(1)	Before granting consent for development for the purposes of mining, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring the rehabilitation of land that will be affected by the development.	Final land uses within the Project Site would comprise agricultural activities and nature conservation.
Clause 17(2)	In particular, the consent authority must consider whether conditions of the consent should: (a) require the preparation of a plan that identifies the proposed end use and landform of the land once rehabilitated, or (b) require waste generated by the development or the rehabilitation to be dealt with appropriately, or (c) require any soil contaminated as a result of the development to be remediated in accordance with relevant guidelines (including guidelines under clause 3 of Schedule 6 to the Act and the *Contaminated Land Management Act 1997*), or (d) require steps to be taken to ensure that the state of the land, while being rehabilitated and at the completion of the rehabilitation, does not jeopardize public safety.	A *Mining Operations Plan/Rehabilitation Management Plan* will be required for the Project.
State Environmental Planning Policy No 33 – Hazardous and Offensive Development (SEPP 33)		
Clause 13	In determining an application to carry out development to which this Part applies, the consent authority must consider (in addition to any other matters specified in the Act or in an environmental planning instrument applying to the development): (a) current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development, and	Key risks associated with the Project pertain to noise, air quality, visual amenity, biodiversity, surface water and social impacts. An assessment of additional hazardous substances will be included in the EIS.

Table 4 (Cont'd)
Pre-conditions to Granting Approval

Page 7 of 8

Statutory Reference	**Pre-condition**	**Relevance**
State Environmental Planning Policy No 33 – Hazardous and Offensive Development (SEPP 33) (Cont'd)		
Clause 13 (Cont'd)	(b) whether any public authority should be consulted concerning any environmental and land use safety requirements with which the development should comply, and (c) in the case of development for the purpose of a potentially hazardous industry—a preliminary hazard analysis prepared by or on behalf of the applicant, and (d) any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location the subject of the application), and (e) any likely future use of the land surrounding the development.	
State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55)		
Clause 7(1)	A consent authority must not consent to the carrying out of any development on land unless: (a) it has considered whether the land is contaminated, and (b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and (c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.	The Project would not be impacted by contaminated land and contamination levels within the Project Site will be compatible with the final land uses of agriculture and nature conservation.
State Environmental Planning Policy (Koala Habitat Protection) 2021 (Koala SEPP)		
Clause 11	(2) Before a council may grant consent to a development application for consent to carry out development on the land, the council must assess whether the development is likely to have any impact on koalas or koala habitat. (3) If the council is satisfied that the development is likely to have low or no impact on koalas or koala habitat, the council may grant consent to the development application. (4) If the council is satisfied that the development is likely to have a higher level of impact on koalas or koala habitat, the council must, in deciding whether to grant consent to the development application, take into account a koala assessment report for the development.	The EIS will include an assessment of Project-related impacts on Koala.

Table 4 (Cont'd)
Pre-conditions to Granting Approval

Page 8 of 8

Statutory Reference	Pre-condition	Relevance
State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP)		
Clause 45(2)	Before determining a development application (or an application for modification of a consent) for development to which this clause applies, the consent authority must— (a) give written notice to the electricity supply authority for the area in which the development is to be carried out, inviting comments about potential safety risks, and (b) take into consideration any response to the notice that is received within 21 days after the notice is given.	The Project would involve the relocation of a number of electricity transmission lines
Clause 101(2)	The consent authority must not grant consent to development on land that has a frontage to a classified road unless it is satisfied that— (a) where practicable and safe, vehicular access to the land is provided by a road other than the classified road, and (b) the safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of— (i) the design of the vehicular access to the land, or (ii) the emission of smoke or dust from the development, or (iii) the nature, volume or frequency of vehicles using the classified road to gain access to the land, and	The EIS will include an assessment of Project-related impacts to the Newell Highway
Clause 104(3)	Before determining a development application for development to which this clause applies, the consent authority must— (a) give written notice of the application to TfNSW within 7 days after the application is made, and (b) take into consideration— (i) any submission that RMS provides in response to that notice within 21 days after the notice was given (unless, before the 21 days have passed, TfNSW advises that it will not be making a submission), and (ii) the accessibility of the site concerned, including— (A) the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and (B) the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and (iii) any potential traffic safety, road congestion or parking implications of the development.	This is a matter for the consent authority.

Table 5
Mandatory Considerations

Statutory Reference	Mandatory Consideration
Considerations under the EP&A Act	
Section 1.3	Relevant objects of the Act: • to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources, • to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment, • to promote the orderly and economic use and development of land, • to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats, • to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage), • to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State, • to provide increased opportunity for community participation in environmental planning and assessment.
Section 4.15	Relevant environmental planning instruments.
	The EP&A Regulation – to the extent that it prescribes matters for the purposes of Section 4.15(1)(a)(iv) of the EP&A Act.
	The likely impacts of the development, including environmental impacts on both the natural and built environment, and social and economic impacts in the locality.
	The suitability of the site for the development.
	Any submissions made in accordance with the EP&A Act or the regulations.
	The public interest.
Considerations under the EP&A Reg.	
Clause 96A	A development consent may only be granted subject to a condition referred to in Section 4.17(4A) or (4B) of the Act if the development is SSD.
Considerations under Environmental Planning Instruments	
Narromine LEP	
Part 2	Objectives and land uses for zones RU1 and E2.
Other	Other relevant LEP sections.
State Environmental Planning Policies (SEPPs)	
SEPP 33	Section 13 – matters for consideration by consent authorities.
SEPP 55	Section 7(1) – land contamination and suitability for development.
Mining SEPP	Clause 12, 12A, 13, 14, 15, 16 & 17.
Koala SEPP	Clause 11
Infrastructure SEPP	Clauses 45, 101 and 104

5 ENGAGEMENT

5.1 GOVERNMENT AGENCY ENGAGEMENT

The Applicant has undertaken individual consultation with the agencies identified in **Table 6**. **Table 6** also presents a brief overview of the feedback from the agencies and the Applicant's actions following receipt of that feedback.

Table 6
Government Agency Consultation

Page 1 of 2

Agency	**Date(s) of Meeting**	**Overview of Discussions and Applicant Response**
Department of Planning, Industry and Environment	30/01/2020 03/03/2020 03/07/2020 11/08/2020 12/10/2020 03/02/2021 16/06/2021	• Application pathway options – a single application for development consent will be submitted • Scoping meeting and submission of Scoping Report • Site tour
Transport for NSW	25/03/2019 26/04/2019 06/11/2019 22/07/2020 11/08/2020 18/08/2020 29/09/2020 07/10/2020 19/10/2020	• Newell Highway realignment – Concept design has been approved – Discussions re consultation strategy and potential highway upgrades – Works Authority Deed negotiations have commenced – Newell Highway user groups – Roadside advertising – Roadside memorials – Works Authority Deed (with a draft WAD received in June 2021)
Narromine Shire Council	24/06/2019 08/07/2019 18/07/2019 08/11/2019 15/01/2020 11/08/2020 10/03/2020 13/05/2020 22/07/2020 24/08/2020 28/08/2020 08/09/2020 17/09/2020 04/11/2020 06/01/2021 09/03/2021	• Site tours (multiple) • Kyalite road realignment and traffic count • Newell Highway realignment • Property acquisitions • Subdivision/Lot amalgamations • Planning agreement • Project updates • Water supply • Exploration in road reserves • Council engagement with Tomingley residents
Resources Regulator	10/06/2020 30/07/2020 11/08/2020	• Final landform design – Geomorphic design for waste rock emplacements under investigation – EPA consulted re in-pit tailings disposal – Integrated tailings facility under consideration – Approvals for exploration programs, including an exploration decline

Table 6 (Cont'd)
Government Agency Consultation

Page 2 of 2

Agency	**Date(s) of Meeting**	**Overview of Discussions and Applicant Response**
Mining, Exploration and Geoscience	10/06/2020 11/08/2020 19/01/2021 03/02/2021	• Resource status • Site tour • Regional investment
Environment Protection Authority	11/08/2020	• EPA expectations re tailings facilities – No change to EPA position re in-pit tailings • EPA expectation re noise, air quality and water assessments
Biodiversity and Conservation Division	11/08/2020 13/08/2020 22/09/2020	• BCD expectations re BDAR and offsetting requirements
Natural Resources Access Regulator and DPIE Water	11/08/2020 26/08/2020	• Groundwater assessment requirements • Surface water assessment
DPIE Agriculture	24/09/2020	• BSAL and agricultural impacts
Local Land Services	24/11/2020 23/02/2021	• Farming practices and ensuring compliance with vegetation clearing laws
Regional NSW	28/09/2020 03/02/2021	• Regional development • Site tour
Crown Lands	03/03/2021	• Road closures and Crown Land lots within the Project Site.
Parkes Shire Council	29/09/2020	• Impacts on Peak Hill
Dubbo Shire Council	29/09/2020	• Impacts on Dubbo

Additional individual consultation is proposed for each of the above as well as the following agencies throughout preparation of the EIS.

- Heritage NSW.
- Commonwealth Department of Agriculture, Water and Environment.

Finally, the Applicant proposes to consult with the following service providers and infrastructure managers.

- Telstra – re. telephone lines for relocation.
- Essential Energy – re. power supply and powerline relocation.
- Vocus Group – re. route for a relocated fibre optic cable.
- Crown Lands – re. closure of paper roads and acquisition of Crown land.

5.2 COMMUNITY ENGAGEMENT

5.2.1 Community Engagement Carried Out

The Applicant has a long history of successfully operating in the Central West of NSW, including developing, mining and rehabilitating the Peak Hill Gold Mine between 1996 and 2005 and developing and operating the Tomingley Gold Operation from 2012 until the present. As a result, the Company has a well-developed understanding of the local community and the groups and individuals with an interest in the Project.

The Applicant commenced formal consultation in relation to the Project on 20 August 2020 when the Community Consultative Committee (CCC) met and a TGO Newsletter outlining the Project was distributed to the community. In addition to the scheduled quarterly CCC meetings, additional monthly meetings were conducted throughout late 2020 and early 2021 to provide specific information to the CCC and to gain feedback from the CCC on the Community Engagement Strategy. The TGO website community information page was also updated to coincide with the commencement of formal consultation **Table 7** presents an overview of consultation carried out to date.

5.2.2 Community Views

Table 8 presents an overview of the community views in relation to the Project. It is noted that community consultation is in its very early stages and that the views presented in **Table 8** are representative of the community members consulted to date. For privacy purposes, the outcomes of consultation have been aggregated by Community Group/Classification.

Table 7
Engagement Carried Out to Date

Community Group/Classification	Community Engagement Carried out
Community Consultative Committee	• Scheduled meetings – 20 August 2020, 17 September 2020, 26 November 2020, 18 February 2021 and 20 May 2021 • Site tours – 18 September 2020 – virtual tour of Tomingley with Cr James Craft; site visit 26-27 November 2020
Rural neighbours or near neighbours	• Individual meetings/discussions – 24 and 25 March 2021, 8 April 2021, 20 and 21 May 2021 • Public meeting – 20 May 2021
Tomingley village residents and businesses	• Individual meetings and questionnaires – August and November 2020 (including general questionnaire/survey in initial letterbox drop) • Newsletter, letterbox drops– August and November 2020, May 2021 • Individual meetings/discussions– 13 August 2020 , 16 September 2020, 25 to 27 November 2020; 20-21 May 2021 • Public meeting – 20 May 2021
Kyalite Road residents and users	• Individual meetings/discussions– 7 January 2021, 24 to 26 March 2021, 8 April 2021 and 20 and 21 May • Individual discussions with school bus route owners/operators: 26 March 2021 and 18 May 2021
Newell highway users (general traffic and heavy transport)	• Factsheet/flyer distributed at truck stops/service stations along the Newell Highway and Peak Hill Visitors Centre. Fact sheet included contact details for more information – November 2020 • Individual discussions with school bus route owners/operators: 26 March 2021 and 18 May 2021
General public (including each of the above)	• Website – Project Page[1] established November 2020 • Newsletters – all newsletters are published on the Applicant's website[2] • Mailing lists – all interested parties may subscribe to the Applicant's mailing lists[3] • Stall at the Dubbo Show – 14 to 16 May 2021

Note 1: https://www.alkane.com.au/projects/tomingley-gold-project/tomingley-gold-extension-project/
Note 2 : https://www.alkane.com.au/projects/tomingley-gold-project/tomingley-gold-operations/community-resources/tgo-community-newsletter/
Note 3: https://www.alkane.com.au/subscribe/

Table 8
Community Views

Community Group/Classification	**Feedback Received**
Community Consultative Committee	Overwhelming support for the Project. The CCC are keen to maximise the benefits to the local community over the extended life of the Project by having a vision of how the Tomingley village may look at the time of mine closure.
Rural neighbours or near neighbours, including Kyalite Road residents	Initial consultation in late 2020 and early 2021 identified mixed views depending on whether or not their amenity (air quality, noise, light, increased traffic) was impacted by TGO's operations or is perceived will be impacted by the Project. Some of those consulted have been successful in gaining employment at TGO or their business has benefited while others have missed out. In early 2021, consultation with residents on Kyalite Road primarily related to seeking feedback on the preferred option for realignment of Kyalite Road (see Section 3.6.4). The overwhelming opinion was that an alignment as close to the existing alignment of Kyalite Road (Option 1) was preferred. In light of this consultation, the option of redirecting Kyalite Road along Thornycroft Road (Option 2) was rejected, despite Option 1 being several million dollars more costly than Option 2. On 20 and 21 May 2021, meetings were held with all fence line neighbours to the SAR Mine Site as well as a range of other landholders. General feedback was that the residents had not asked for the Project and would prefer that it not be developed. Specific issues raised included the following. • Visual, noise and air quality impacts were of particular concern. • Changes to the alignment of Kyalite Road and changed traffic levels. • Changes to the alignment of the Newell Highway and arrangements for moving stock and machinery across the Highway. • Business opportunities, including opportunities to lease Applicant-owned land and challenges associated with TGO purchasing land and thereby limiting future expansion opportunities. • Management of weeds and pests on Applicant-owned land. Om each case the Applicant committed to meeting with each resident again before finalisation of the EIS to discuss the results of the Specialist Consultant assessments, answer questions and discuss and agree upon management and mitigation measures.
Tomingley Village residents and businesses	While the Tomingley residents raised issues related to noise and dust in the early years of TGO when Waste Rock Emplacements 2 and 3 were being constructed close to the village, amelioration efforts by the Applicant have provided significant improvements to many impacted residences in the village. Similar to above, some of those consulted have been successful in gaining employment at TGO or their business has benefited while others have missed out. Others also acknowledged TGO’s support for community organisations and infrastructure. There was general support for the Project and TGO, from the residents of Tomingley, with a number noting that the noise and dust generating activities would be relocated further away from the village. Some of those consulted, however, expressed concerns in relation to ongoing noise and dust emissions. Many residents also expressed that they were happy with improvements the Applicant had made to their properties including air conditioning units, insulation, double glazed windows, solid core doors and the ongoing annual financial assistance from the Applicant in respect of payment of power bills.
Newell Highway users (general traffic and heavy transport)	No feedback was received from users of the Newell Highway.

5.2.3 Community Engagement to be Carried Out

Table 9 presents the community engagement to be carried out throughout preparation of the EIS, including indicative timing for each of the proposed engagement activities. As it has done to date, the Applicant will maintain a detailed consultation log and will actively seek feedback on the Project. That feedback will be recorded in the consultation log, with anonymised results presented in the EIS.

Table 9
Community Engagement to be Carried Out

Page 1 of 2

Community Group/Classification	Potential Engagement Methodology	Indicative Timing
Community Consultative Committee	• Scheduled meetings	• Quarterly or monthly
	• Site tours	• On request • Pre exhibition • During exhibition
Rural neighbours or near neighbours, including Kyalite Road residents	• Individual meetings/discussions • Small group meetings/discussions	• Pre-exhibition • During exhibition
	• Site tours	• On request • During exhibition
Tomingley village residents and businesses	• Newsletter, letterbox drops • Individual meetings/discussions • Small group meetings/discussions • Community/townhall meetings • Drop-in information sessions	• Pre-exhibition • During exhibition
	• Site tours	• During exhibition
Peak Hill community	• Newsletter (via website) • Community/townhall meetings • Small group meetings/discussions • Drop-in information sessions • Local media/websites/fact sheets	• Pre-exhibition • During exhibition
	• Site tours	• During exhibition
Surrounding Local Government Area residents (Dubbo, Narromine and Parkes and surrounds)	• Newsletter, letterbox drops • Community/townhall meetings • Drop-in information sessions • Local media/websites/fact sheets	• Pre-exhibition • During exhibition
	• Site Tours	• During exhibition
Local Aboriginal community	• Participation and input to the heritage assessment for the Project • Individual meetings/discussions • Small group meetings/discussions	• Pre-exhibition • During exhibition
	• Site tours	• On request • During exhibition

Table 9 (Cont'd)
Community Engagement to be Carried Out

Page 2 of 2

Community Group/Classification	**Potential Engagement Methodology**	**Indicative Timing**
Non-government organisations (NSW Farmers Federation, Landcare, Chambers of Commerce, Progress Associations, service groups, training providers, others)	• Presentations at meetings • Small group meetings/discussions • Teleconferences/video conferences	• On request
Newell highway users (general traffic and heavy transport)	• Consultation as directed by Transport for NSW • Newsletters/factsheets/flyers to be distributed at truck stops/service stations along the Newell Highway • Information distributed through heavy vehicle representative organisations	• On request • Pre-exhibition
Current employees working at Tomingley Gold	• Focus groups • Staff survey (anonymous)	• Pre-exhibition • During exhibition

6 PROPOSED ASSESSMENT OF IMPACTS

Table 10 presents a summary of environmental matters and identifies those mattes that require further assessment in the EIS. **Table 11** identifies how each of the key matters requiring further assessment will be assessed in the EIS

Table 10
Proposed Assessment of Impacts

Page 1 of 2

Matter	Existing Environment	Potential Scale of Impacts	Nature of Impacts	Sensitivity of Receiving Environment	Ability to Avoid, Mitigate or Offset Impact	Key Matter for Further Assessment and Level of Assessment?
Access – traffic and parking	Newell Highway Kyalite Road Back Tomingley West Road McNivens Lane	Significant	Realignment of Newell Highway and Kyalite Road and modification of intersections with Back Tomingley West Road and McNivens Lane.	Sensitive	No ability to avoid. May be mitigated and offset by replacement with roads of a higher standard than current exists.	Yes - Detailed
Air – Gasses	Typical rural environment	Negligible	Emissions of greenhouse gasses.	Non-sensitive	Impacts may be mitigated through the use of fuel efficient mobile plant.	Yes - Minor
Air - Particulate matter	Typical rural environment, including dust emissions from agricultural activities and natural sources.	Minor	Dust emissions associated with vehicle movements and wind erosion from disturbed surfaces	Non-sensitive	Impacts may be mitigated through the use of dust suppression measures and progressive rehabilitation.	Yes – Standard
Amenity – Noise	Typical rural environment, with agricultural and traffic noise during the day and limited noise at night.	Significant	Noise emissions, particularly during the evening and night are likely to comply with relevant criteria but will represent a substantial change for near neighbours of the SAR Mine Site.	Sensitive	Impacts may be mitigated by equipment selection, amenity bunds, operational procedures and receiver mitigation .	Yes - Detailed
Amenity – Air bast and vibration	Current TGO mining operations result in air blast and ground vibration.	Minor	Air blast and ground vibration impacts will be experienced by residents who have not previously experienced such impacts	Non-sensitive	Impacts may be mitigated by site-specific blast design and monitoring.	Yes - Standard
Amenity – Visual	Typical rural environment, with areas of agriculture, native vegetation and road traffic visible. Some areas have views of the TGO Mine Site.	Significant	Some residents will experience substantial changes to their visual catchment. Others will experience no or minor changes. Motorists using the Newell Highway will experience minor changes to the visual environment. Motorists using Kyalite Road will experience substantial changes to the visual environment.	Sensitive	Impacts may be mitigated by source and receiver amenity bunds and progressive rehabilitation of the shaped landform.	Yes - Detailed
Biodiversity – Terrestrial flora and fauna	Mixed native vegetation and cropping/agricultural lands.	Moderate	Disturbance of native vegetation, including Endangered Ecological Communities.	Sensitive	Impacts have been avoided through modifications to the layout of the SAR Mine Site. Impacts would also be offset in accordance with the procedures under the BC Act.	Yes – Standard
Biodiversity – Aquatic flora and fauna	Infrequent, poorly defined, ephemeral watercourses.	Negligible	No aquatic habitat present.	Non-sensitive	Not applicable.	Not relevant
Built Environment – Public infrastructure	Newell Highway Kyalite Road Back Tomingley West Road McNivens Lane Powerlines Communications infrastructure	Significant	Realignment of Newell Highway and Kyalite Road and modification of intersections with Back Tomingley West Road and McNivens Lane. Relocation of power and communication infrastructure.	Sensitive	Impacts may be mitigated and offset by replacement with roads of a higher standard than current exists. Power and communication interruptions would be limited to the switchover period.	Yes - Detailed
Economic – Natural resources use	Extraction of a State-owned resource	Minor	Use of a State-owned resource and potential sterilisation of unidentified resources	Non-Sensitive	Impacts have been avoided by sterilisation drilling.	Not relevant
Economic – Livelihood and opportunity cost	Existing agricultural operations	Minor	Mining operations may impact on surrounding agricultural businesses	Sensitive	Impacts on neighbouring agricultural operations may be mitigated and offset by appropriate weed and pest management and coordination of agricultural operations. Impacts on other businesses would be largely positive associated increased economic activity.	Yes - Standard
Hazards and risks – Biosecurity	Typical rural environment, with cropping and grazing properties at risk of weed, pest and pathogen -related impacts	Minor	Weeds, pests or pathogens become established	Sensitive	Impacts may be avoided by appropriate management of access to agricultural land and management of weeds and pests on Applicant-owned land.	Yes – Minor

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Table 10 (Cont'd)
Proposed Assessment of Impacts

Page 2 of 2

Matter	Existing Environment	Potential Scale of Impacts	Nature of Impacts	Sensitivity of Receiving Environment	Ability to Avoid, Mitigate or Offset Impact	Key Matter for Further Assessment and Level of Assessment?
Hazards and risks – Bushfire	Typical rural environment, with cropping and grazing properties at risk of bushfire	Minor	Fire starting within or impacting upon the Project Site.	Sensitive	Impacts may be avoided by appropriate fire management measures and asset protection zones	Yes – Minor
Hazards and risks – Dams safety	Two approved Residue Storage Facilities	Minor	Potential catastrophic failure or leakage	Sensitive	Impacts may be avoided by appropriate design and construction in accordance with the relevant guidelines.	Yes – Minor
Hazards and risks – Dangerous goods	Explosives and cyanide currently used within the TGO Mine Site.	Minor	Construction of an additional magazine	Non-sensitive	Impacts may be avoided by appropriate design and construction in accordance with the relevant guidelines.	Yes – Minor
Heritage – Aboriginal	Heritage survey completed. A range of Aboriginal heritage objects identified	Minor	Disturbance of a number of Aboriginal objects	Sensitive	Impacts may be mitigated by consultation with the Aboriginal community and appropriate salvage and management of artefacts and offset through negotiated community benefits.	Yes – Standard
Heritage – Historic	No historic heritage objects occur within the Project Site	Negligible	Nil	Non-sensitive	Not Applicable	Yes – Minor
Land – soil and Land capability	Three soil units present within the SAR Mine Site. One may be classified as Biophysical Strategic Agricultural Land.	Major	Disturbance of high quality agricultural soils	Sensitive	Direct impacts may be mitigated by appropriate stripping, stockpiling and respreading of soil resources. Indirect impacts, such as net loss of agricultural productivity, may be offset through improved agricultural practices and remediation of low productivity soil	Yes - Detailed
Social – Social amenity and cohesion	Loose knit rural agricultural and village community, with a number of residents likely to be much closer to mining operations than was previously the case.	Significant	Reduced social amenity and cohesion	Sensitive	Impacts may be mitigated by significant consultation and implementing modifications to the Project, including mitigation measures, to address individual's concerns.	Yes – Detailed
Water – Hydrology and surface water	Surface water flows largely as overland flows, with a limited number of poorly defined watercourses. Surface water backs up against the Newell Highway and floods the Highway every 3 to 4 years.	Major	Modified surface water flows and permanent diversions	Sensitive	Impacts may be mitigated by appropriate design of surface water management structures, including construction of suitable culverts under the Newell Highway	Yes – Detailed
Water – Hydrogeology and groundwater	Very limited groundwater within the fractured rock aquifer. Closest bore is more than 6km from the proposed SAR Open Cut.	Minor	Drawdown of local fractured rock aquifers	Non-sensitive	Impacts may be mitigated by monitoring of ground water take and surrounding water levels.	Yes – Standard.

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Table 11
Scoping Summary

Page 1 of 2

Level of Assessment	Matter	Cumulative Impact Assessment	Community Engagement	Relevant government plans, policies and guidelines
Detailed	Access – traffic and parking	No	Detailed	• Guide to Traffic Generating Development (RTA) • Road Design Guide (RMS) & relevant Austroads Standards
	Amenity – Noise	No	Detailed	• NSW Noise Policy for Industry (EPA) • Interim Construction Noise Guideline (EPA) • NSW Road Noise Policy (EPA) • Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZEC)
	Amenity – Visual	No	Detailed	• Nil
	Built Environment – Public infrastructure	No	Detailed	• Nil
	Land – soil and Land capability	No	Detailed	• State Environmental Planning Policy No. 55 – Remediation of Land • Agricultural Land Classification (DPI) • Rural Land Capability Mapping (OEH) • Soil and Landscape Issues in Environmental Impact Assessment (NOW) • Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC) • Guidelines for Consultants Reporting on Contaminated Sites (EPA) • Agricultural Issues for Extractive Industry Development (DPI) • Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land
	Social – Social amenity and cohesion	No	Detailed	• Social impact assessment guideline for State significant mining, petroleum production and extractive industry development
	Water – Hydrology and surface water	No	General	• NSW State Rivers and Estuary Policy (NOW) • NSW Government Water Quality and River Flow Objectives (EPA) • Using the ANZECC Guideline and Water Quality Objectives in NSW (EPA) • National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ) • National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ) • Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA) • Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries (DECC) • Managing Urban Stormwater: Treatment Techniques (EPA) • Managing Urban Stormwater: Source Control (EPA) • Technical Guidelines: Bunding & Spill Management (EPA) • A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH) • NSW Guidelines for Controlled Activities (NOW)
Standard	Air - Particulate matter	No	General	• Protection of the Environment Operations (Clean Air) Regulation 2002 • Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA) • Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA) • National Greenhouse Accounts Factors (Commonwealth)
	Amenity – Air bast and vibration	No	General	• Australian Standard AS 2187.2-2006 (Explosives – Storage, Transport and Use - Use of Explosives

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Table 11 (Cont'd)
Scoping Summary

Page 2 of 2

Level of Assessment	Matter	Cumulative Impact Assessment	Community Engagement	Relevant government plans, policies and guidelines
Standard (Cont'd)	Biodiversity – Terrestrial flora and fauna	No	General	• Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (Commonwealth of Australia, 2013) • Commonwealth EPBC 1.2 Significant Impact Guidelines – Actions on, or Impacting upon, • Commonwealth Land and Actions by Commonwealth Agencies (Commonwealth of Australia, 2013) • Commonwealth Department of the Environment – Nationally Threatened Ecological Communities and Threatened Species Guidelines (various) • Commonwealth Department of the Environment – Survey Guidelines for Nationally Threatened Species (various) • Biodiversity Assessment Method (EES 2020) • Guidance and Criteria to assist a decision maker to determine a serious and irreversible impact (OEH 2017) • Ancillary rules: Biodiversity conservation actions • Ancillary rules: Reasonable steps to seek like-for-like biodiversity credits for the purpose of applying variation rules • NSW Guide to Surveying Threatened Plants (OEH 2016) • Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna – Amphibians (DECC 2009) • Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DEC 2004) • Threatened Species Assessment Guideline – The Assessment of Significance (DECC 2007) • OEH principles for the use of biodiversity offsets in NSW • NSW State Groundwater Dependent Ecosystem Policy (NOW)
	Economic – Livelihood and opportunity cost	No	General	• Guidelines for the economic assessment of mining and coal seam gas proposals
	Heritage – Aboriginal	No	General	• The Burra Charter (The Australia ICOMOS charter for places of cultural significance) • Guide to investigation, assessing and reporting on Aboriginal cultural heritage in NSW (OEH) 2011 • Aboriginal Cultural Heritage Consultation Requirements for Proponents (OEH) • Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (OEH) • Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (OEH) • NSW Heritage Manual (OEH) • Statements of Heritage Impact (OEH)
	Water – Hydrogeology and groundwater	No	On Request	• NSW Aquifer Interference Policy 2012 (NOW) • NSW State Groundwater Policy Framework Document (NOW) • NSW State Groundwater Quality Protection Policy (NOW) • NSW State Groundwater Quantity Management Policy (NOW) • Australian Groundwater Modelling Guidelines 2012 (Commonwealth) • National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC) • Guidelines for the Assessment & Management of Groundwater Contamination (EPA)
Minor	Air – Gasses	No	On Request	• Protection of the Environment Operations (Clean Air) Regulation 2002 • Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA) • Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA) • National Greenhouse Accounts Factors (Commonwealth)
	Hazards and risks – Biosecurity	No	On Request	• Nil
	Hazards and risks – Bushfire	No	On Request	• Planning for Bushfire Protection 2019 (RFS)
	Hazards and risks – Dams safety	No	On Request	• Dams Safety NSW and Australian National Committee on Large Dams guidelines
	Hazards and risks – Dangerous goods	No	On Request	• State Environmental Planning Policy No. 33 – Hazardous and Offensive Development • Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 • Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis
	Heritage – Historic	No	On Request	• NSW Heritage Manual (OEH) • Statements of Heritage Impact (OEH)

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