

## MINING, EXPLORATION & GEOSCIENCE ADVICE RESPONSE

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Dear Clay

**Project: Tomingley Gold Extension Project**  
**Stage: Environmental Impact Statement review**  
**Development Application: SSD-9176045**

I refer to Department of Planning and Environment correspondence dated 25 February 2022 inviting the Department of Regional NSW – Mining, Exploration & Geoscience (MEG) to provide comments on the Tomingley Gold Extension Project (the Project or the Tomingley Extension) submitted by Tomingley Gold Operations Pty Ltd, a wholly owned subsidiary of Alkane Resources Limited (the Proponent or Alkane).

### Executive summary

The Project is proposed to allow for the extension of operations and recovery of additional resource within existing mining and exploration titles adjacent to the currently approved operations at Tomingley Gold Operations (TGO or Tomingley).

**Table 1: MEG determination estimate of total royalties**

Parameter	\$m (2022 dollars)
Total Royalties received	47
Net Present Value (NPV) royalties (7% discount rate, real)	31
Annual estimated royalties (average after production commences)	6 (approximately)

The Project will generate:

- continuation of up to 180 full-time equivalent (FTE) current jobs during operations from 2022 to 2031, with a peak of 363 FTE over the extension term
- a production value around \$1.6 billion in current dollars, with the NPV of this revenue stream at around \$1.1 billion
- capital investment of about \$101 million
- an extended Life-of-Mine (LOM) from 2025 until 2031
  - MEG notes production from this Project is currently estimated to finish in 2031. Future exploration success or periods of higher prices may enable lower grade resources to become financially viable and may extend mining at Tomingley beyond to 2035 (or beyond)

MEG considers the Project will provide an appropriate return to the NSW Government

The Tomingley Extension is considered to be an efficient use of resources. If the Project does not proceed the economic and social benefits outlined above will not be realised.

## Resource and economic context

In Financial Year 2021 (FY21) New South Wales (NSW) produced 1,197,160 ounces of gold, with a value of AUD\$2.95 billion. NSW accounted for about 12% of Australia's gold production.

In FY21, TGO was the third largest gold producer in New South Wales with Cadia Valley Operations being the largest. Tomingley produced 57,014 ounces of gold in FY21, making up about 5% of New South Wales' annual gold production.

### *Mines with gold as the principal commodity*

There are seven mines, with gold as the principal commodity, operating in New South Wales:

- Cowal Gold Operations
- Cadia Valley Operations
- Dargues Gold Mine
- Hera Mine
- Mt Boppy
- Peak Gold Mine
- Tomingley Gold Operations

Northparkes Mine produces gold, however it is not the principal commodity.

All operations listed currently involve underground mines while TGO is a mixed method mine, undertaking both underground and open cut mining. Cowal Gold Operations underground project was approved in late 2021 and is intended to commence extraction in 2023.

## Economic benefits of the Project

The Project is seeking an approval to extend the current LOM of the operating TGO from the current approved date of end 2025 to end 2035. MEG notes production from this Project is currently estimated to finish in 2031 but that future exploration success or periods of higher prices enable lower grade resources to become financially viable and may extend mining at Tomingley to 2035 (or beyond). The Project includes both open cut and underground operations.

The Project would maintain/extend the current FTE's (existing jobs at Tomingley) and at its peak raise the maximum numbers to 363 FTE jobs over the period 2022 to 2031.

Over the life of the Project, MEG has estimated that the value of the gold produced would be of the order of \$1.6 billion in current dollars, with the net present value of this revenue stream at around \$1.1 billion at a discount rate of seven percent.

Capital expenditure for the Project is around \$101 million. As the project forms part of an extension to the existing TGO, it is able to use much of the existing infrastructure. It is expected that gold from the Project would be processed similarly onsite into gold dore which would then be sent to the Perth mint for further processing into higher grade gold.

## Royalty calculation - assumptions

The Project is an extension to an existing mine that produces gold.

MEG does not disagree with the metals price assumptions provided by the Proponent for the years 2024 to 2031 and in MEG's calculation, has used a royalty rate of less than 4% to capture the average deductions incurred by this type of operation.

After a rigorous analysis of the geological information provided by the Proponent, MEG is of the opinion that if the Project is approved, the gold output in each of the projected years as provided by Alkane is achievable. As such the future royalty calculations can subsequently be estimated.

*Explanatory note* - A royalty rate of four percent applies to the value of all metals produced. The metals deductions are allowed on the price received and include: onsite treatment expenses, realisation expenses, onsite administration and depreciation. The net value after these deductions is referred to as the ex-mine value; the four percent royalty rate is applied to the ex-mine value amount. One of the most important assumptions in the calculation of future royalty is the estimate of future metals prices over the life of a modification.

## Resource Assessment

### *Background*

The TGO is an orogenic-style, quartz vein associated series of gold deposits situated within Ordovician-aged Mingelo Volcanics of the Lachlan Orogen. The deposits form a series of steeply dipping ore zones where gold mineralisation is associated with extensive veining and alteration of the volcanic rock. The host sequences are overlain by up to 70 metres of alluvial cover.

The San Antonio and Roswell (SAR) deposits occur within the same geological units as TGO. The Proponent has a good understanding of the geological aspects of the project and appropriate studies have been conducted to understand the resource and maximise its recovery.

TGO is a mature operation that commenced in 2013. Ore is processed at the on-site mill which consists of a crushing circuit, single-stage milling circuit and hybrid carbon-in-leach (CIL) circuit.

The addition of SAR allows operations to continue to at least 2031 based on current resources. With continued exploration success this could extend to 2033.

### *Size and quality of the resource*

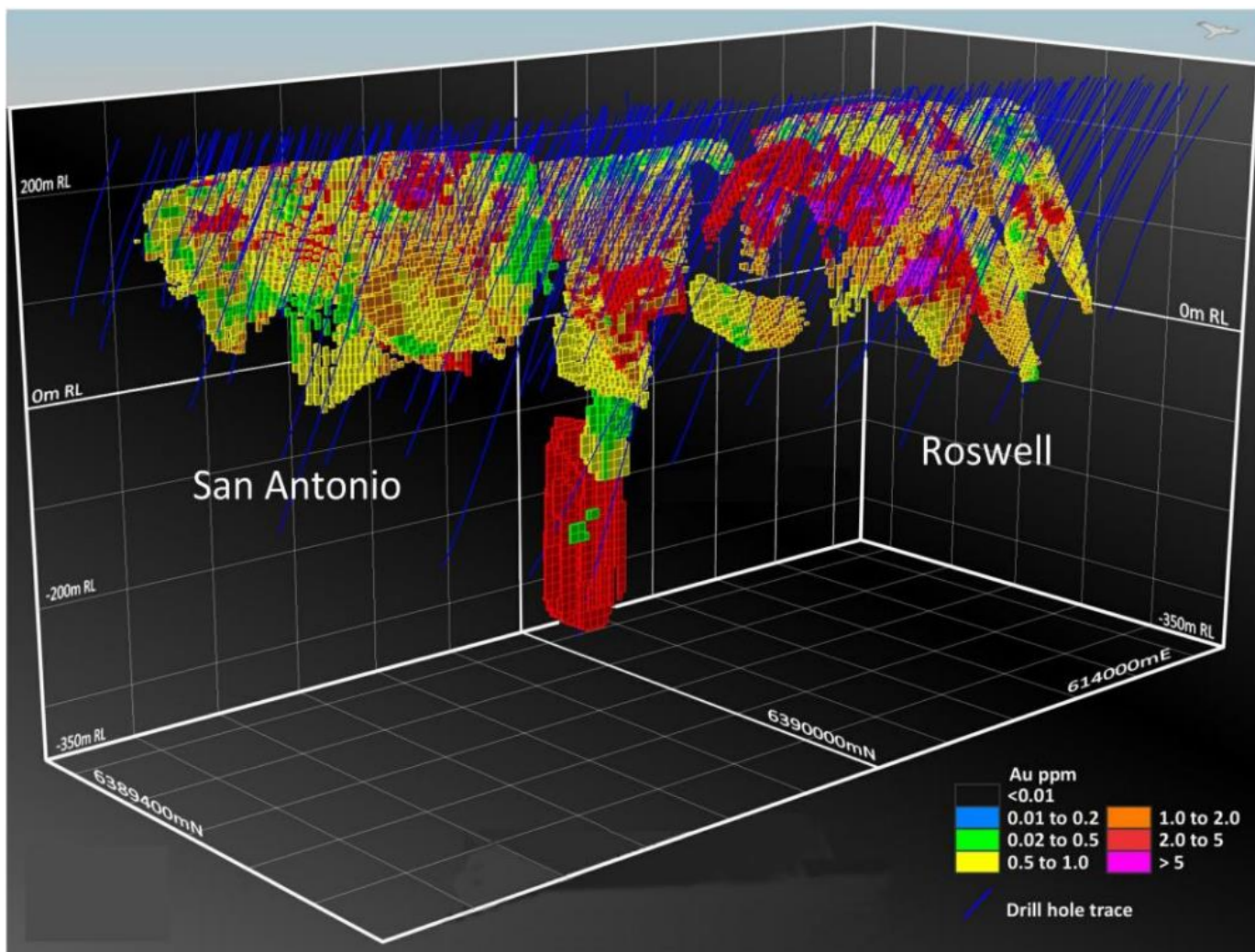
As reported to the Australian Stock Exchange in September 2021, the total estimated mineral resource (indicated and inferred) at SAR is 17.378 Million tonnes (Mt) at an average grade of 1.91 grams per tonne (g/t) Au (1,066 koz).

Ore reserves are the economically recoverable part of a mineral resource once all modifying factors and mining constraints have been applied. Total (probable) ore reserves at SAR are 9.442 Mt at an average grade of 1.9 g/t Au (563 koz). This includes both open cut and underground resources. The breakdown of current mineral reserves is:

- Open cut – 7.867 Mt @ 1.7 g/t Au (420 koz)
- Underground – 1.575 Mt @ 2.8 g/t Au (142 koz)

### *JORC code considerations*

The Proponent has completed resource and reserve estimations for the Project in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC code) produced by the Australasian Joint Ore Reserves Committee (Figure 1). The JORC Code is an industry-standard professional code of practice that sets minimum standards for public reporting of mineral exploration results, mineral resources and ore reserves. Reserves are the economically mineable portion of a resource. A JORC compliant reserves report assists in independently assessing the commercial viability of the Modification and the proposed mining method.



**Figure 1. 3D view of the SAR block model from Alkane Resources Limited EIS**

### *Resource recovery*

The host rocks and ore type at SAR are the same as TGO and the project will use existing infrastructure and processing facilities already approved and operational.

The resource contains both fresh and oxide ore (<15% of the total) and it is anticipated that the processing plant throughput will increase while mining the oxide material. The current processing rate of 1.5 Million tonnes per annum (Mtpa) will increase to 1.75 Mtpa with the addition of a ball mill to account for this. According to the supplied production schedule this should occur in Financial Year (FY) 2025.

Mining is intended to commence from underground at Roswell during FY 2023 via the underground exploration drive developed from the Wyoming 1 underground workings at TGO (approved May 2020). Mining will then proceed in FY 2024 from both the SAR open cut and underground concurrently. This maximises recovery of both lower grade near-surface ore and deeper high-grade ore.

In view of the opportunities and constraints outlined in the Proponent's Project and based on the information currently available, MEG considers that the Project is consistent with the objects of the *Mining Act 1992*. Furthermore, in relation to clause 2.21 of the State Environmental Planning Policy (Resources and Energy) 2021, the Modification represents an efficient development and utilisation of minerals resources which will foster significant social and economic benefits.

MEG is satisfied that, should the operational outcomes be achieved, the proposed mine design and mining method submissions adequately recover resources and will provide an appropriate return to the state.



## **The requirement for a mining authority and royalty liability**

### *The requirement for a mining lease*

MEG notes that this Project is located within the existing operations area of Mining Lease 1684 (Act 1992) (ML 1684), Mining Lease 1821 (Act 1992) (ML 1821) and the project extension area within Exploration Licence 5830 (Act 1992) (EL 5830) and Exploration Licence 5675 (Act 1992) (EL 5675).

The Proponent must obtain the appropriate mining title(s), such as a mining lease, from MEG allowing for mineral extraction (Antimony, Arsenic, Bismuth, Copper, Gold, Lead, Silver, Zinc) under the *Mining Act 1992* over the project extension area. MEG advises that all minerals that could be included in any future extraction and recovery should be included within the development consent application.

A development application under the *Environmental Planning and Assessment Act 1979* must be approved before a mining lease can be granted. A mining lease will only be granted for activities specified in the development consent.

For ancillary mining activities as, in so far as the ancillary activities are to be carried out in connection with and in the immediate vicinity of a mining lease in respect of a mineral, the proponent is required to hold a Mining Lease for ancillary mining activities or an 'off title' designated ancillary mining activity as defined by clause 7 of the Mining Regulation 2016 (the Regulation).

Where a proposal includes Crown Land the proponent is required to comply with the *Commonwealth Native Title Act 1993* and undertake the right to negotiate process for the Crown Lands within the current exploration licence area(s) if proof of extinguishment cannot be determined.

### *Royalty Liability*

The holder of a mining lease is also liable to pay a royalty for both publicly and privately-owned minerals (refer to section 282-285 of the Act).

## **Application of section 65 of the *Mining Act 1992* – development consents under the *Environmental Planning and Assessment Act 1979***

A development application under the *Environmental Planning and Assessment Act 1979* must be approved before a mining lease can be granted. A mining lease will only be granted for activities specified in the development consent.

Section 65 states:

*The Minister must not grant a mining lease over land if development consent is required for activities to be carried out under the lease unless an appropriate development consent is in force in respect of the carrying out of those activities on the land.*

## **Biodiversity offset assessment**

MEG requests that the Proponent consider potential resource sterilisation should any future biodiversity offset areas be considered. The Proponent must consult with MEG and any holders of existing mining or exploration authorities that could be potentially affected by the proposed creation of any such biodiversity offsets, prior to creation occurring. This will ensure there is no consequent reduction in access to prospective land for mineral exploration or potential for the sterilisation of mineral and extractive resources.

## **Summary of review**

MEG considers that should the Project be approved; efficient and optimised resource outcomes can be achieved.

MEG requests that it be provided with an opportunity to review the draft conditions of approval before finalisation and any granting of development consent.

For enquiries on this matter, please contact Adam Banister, Senior Advisory Officer – Industry Advisory & Mining Concierge Unit within the Industry Development Branch on 02 4063 6860 or [mining.concierge@regional.nsw.gov.au](mailto:mining.concierge@regional.nsw.gov.au).

Yours sincerely



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28 March 2022