New Cobar Complex Project

State Significant Development and Modification Assessment (SSD 10419)

Planning Secretary's Assessment Report

April 2022

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Title: New Cobar Complex Project

Subtitle: Amalgamation of underground mining for the New Cobar Complex.

Cover image: New Cobar Open Cut pit viewed from Fort Burke Hill Viewing Platform

Executive Summary

Peak Gold Mines Pty Ltd (PGM), a wholly owned subsidiary of Aurelia Metals Limited, owns and operates the New Cobar Complex (the complex), an existing open cut and underground mineral mine located 3 kilometres (km) south east of Cobar in the far west region of New South Wales (NSW).

PGM is seeking approval for the New Cobar Complex Project (the Project) to allow for ongoing underground extraction of mineral resources extracting ore to produce gold, copper, lead, zinc, and silver at the complex for a further 12 years to 2035.

The Department publicly exhibited the Environmental Impact Statement (EIS) for the Project and received 10 public submissions, including 4 objections. The Department also received advice from 17 government agencies, including Cobar Shire Council. All issues raised were carefully considered in the Department's assessment of the Project.

The key matters for assessment for the Project relate to groundwater drawdown, management of potentially acid-forming (PAF) waste rock, dust and heavy metals exposure.

The Project would result in groundwater drawdown in the vicinity of the site, including at one registered bore at the Cobar District Rugby Club. PGM has committed to providing compensatory water supply to offset water losses attributed to the Project.

The extraction and exposure of PAF waste rock has the potential to result in acidic mine drainage. This is an existing risk encountered at the complex that would require continued careful management and emplacement design to avoid adverse impacts.

The Project would result in marginal increases in air emissions, with no exceedances of air quality criteria predicted at any receivers. The exposure levels to the community from metals in dust is predicted to be well below health guidelines, and is therefore considered to be a very low risk of harm to human health.

The Project would also have other environmental and social impacts related to increased traffic, amenity, heritage, hazards and rehabilitation. The Department considers these matters are able to be managed to achieve an acceptable level of environmental performance, subject to the recommended conditions of consent.

The Project would provide significant economic benefits to the surrounding region and NSW and is consistent with relevant NSW strategic frameworks for mineral extraction and regional development.

The Project is located in a long-established mining area and would support ongoing and additional employment for local and State-wide workers for an additional 12 years. The Project would result in economic benefits to NSW and surrounding regional areas including approximately $59.7 M in royalties and $145 M in direct and flow on expenditure.

The Department considers that the Project would not result in any significant impacts on the local community or the environment, and any residual impacts could be managed through the implementation of the recommended conditions.

On balance, the Department considers that the benefits of the Project significantly outweigh its residual costs, and is therefore in the public interest and should be approved, subject to strict conditions.

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1 Introduction

1.1 Background

Peak Gold Mines Pty Ltd (PGM), a wholly owned subsidiary of Aurelia Metals Limited, owns and operates the New Cobar Complex (the complex), located 3 kilometres (km) south east of Cobar in the far west region of New South Wales (NSW) (see **Figure 1**).

The complex is an open cut and underground mineral mine that has been operating since 2000, extracting ore to produce gold, copper, lead, zinc, and silver. The complex operates as a combined operation with PGM's Peak Gold Complex, located 10 km to the south east.

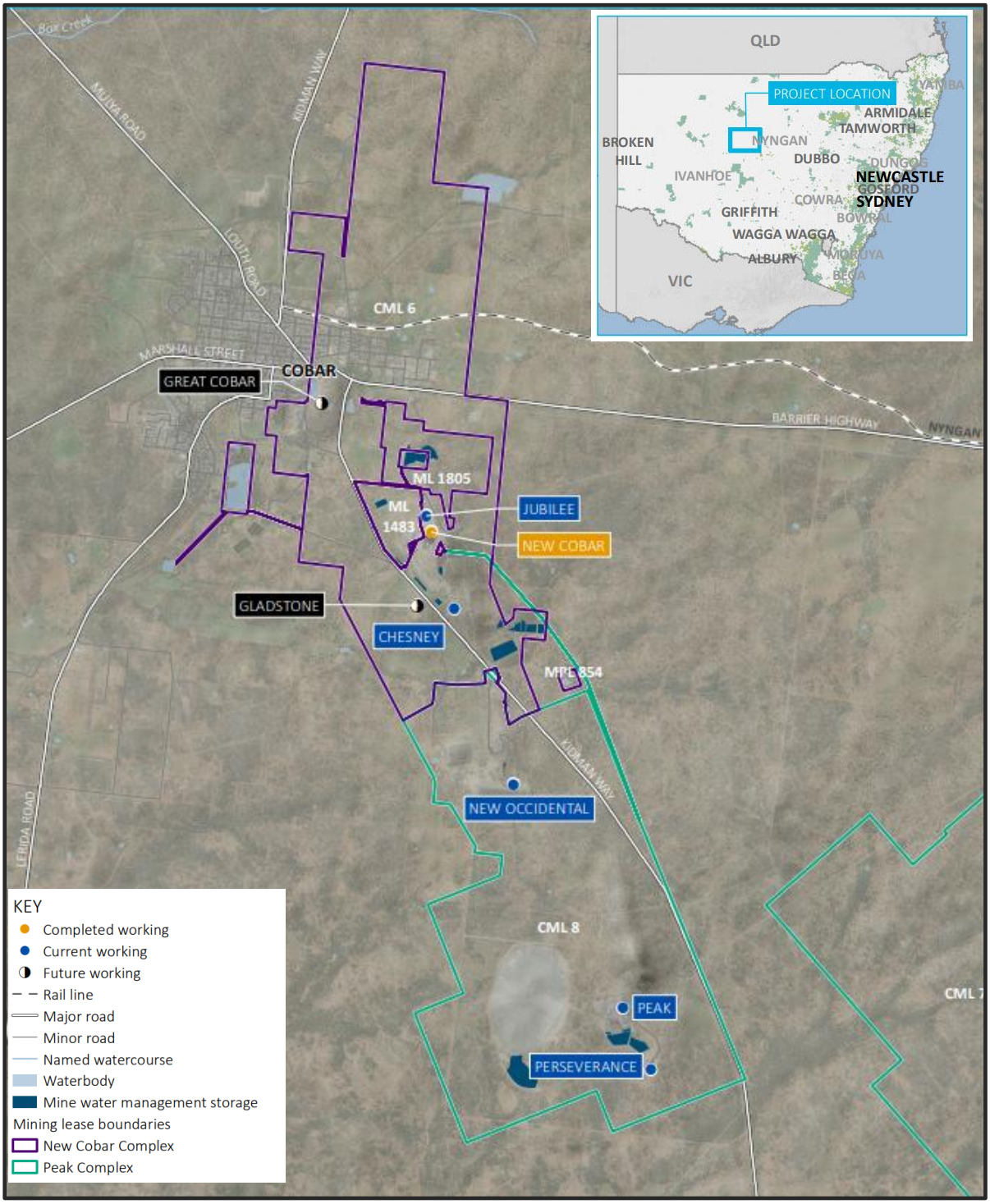

Figure 1 | New Cobar Complex Regional Context (Source: EMM 2021)

1.2 Existing Approvals

The complex operates under several development consents issued by Cobar Shire Council (Council). Under these consents, PGM is permitted to extract ore from the New Cobar, Chesney and Jubilee deposits and process ore at the Peak Complex at a rate of up to 800,000 tonnes per annum (tpa). While existing consents allow for mining to continue indefinitely, commercial viability associated with the existing resource approved to be extracted is expected to constrain mining beyond 2023.

Table 1 provides a summary of the existing consents under which the complex currently operates. Where appropriate, PGM would surrender these consents if the Project is approved and all mining operations would operate under a single consolidated consent.

Table 1 | Existing development consents

Consent	Scope	Consent Status	Proposed Approach
98/99:8	Open cut mining from New Cobar South Open Cut, stockpile of waste rock and transport of ore to the Peak Complex for processing (CML 6)	Open cut mining under consent complete	Consent to be surrendered
99/00:022	Open cut gold mine – New Cobar Open Cut	Open cut mining under consent complete	Consent to be surrendered
2004/LDA-00003	Underground mining, including extraction from the New Cobar, Chesney and Jubilee deposits	Development of Chesney and Jubilee deposits ongoing	Relevant conditions to be consolidated under this application and consent surrendered
2014/LD-00031	Jubilee raise bore and ventilation fan establishment	Construction complete, operation of bore and vent fan ongoing	Relevant conditions to be consolidated under this application and consent surrendered
2019/LD-00024	Great Cobar Pipeline Project	Construction complete, operations ongoing	Relevant conditions to be consolidated under this application and consent surrendered
2014/LD-00048	Vibration Monitor	Development complete	Works complete, surrender not required
2016/LD-00028	Relocation of dewatering line	Development complete	Works complete, surrender not required
2014/LD-00036	Subdivision – one additional lot and boundary adjustment.	Development complete	Development not related to mining activities, surrender not required

Processing activities and tailings storage is undertaken at the Peak Complex and is regulated under a separate consent from Council, which does not form part of this application.

The complex also operates under mining leases issued under the *Mining Act 1992* (Mining Act) and an Environment Protection Licence (EPL 3596) issued under the *Protection of the Environment Operations Act 1997*.

2 Project Details

PGM is seeking approval for the New Cobar Complex Project (the Project), to allow for the ongoing extraction of mineral resources at the complex. The key components of the Project are outlined in **Table 2** and shown in **Figures 2** to **5**. The Project is described in detail in the Environmental Impact Statement (EIS), see **Appendix A**.

Table 2 | Key Component Comparison of Existing Operations with Proposed Project

Component	Proposed Project
Mine Life	• 2035 (an additional 12 years)
Mine Method	• Underground stope mining • Backfill of completed stopes with waste rock material
Resource deposits	• Continued mining of Chesney and Jubilee deposits • Extraction of two additional ore deposits (Great Cobar and Gladstone)
Mine Access	• Continued access to underground workings via the existing New Cobar Open Cut pit, approved box cut and existing / approved declines • New decline to access Gladstone deposit
Total Production	• Total ore production of approximately 6 million tonnes • Total mineral production of approximately 148,000 ounces (oz) of gold, 3,970,000 oz of silver and 210,000 tonnes of base metals
Processing	• Continued crushing and screening of oversized material at the ROM pad • No ore processing undertaken at the complex. Continued ore processing at the Peak Complex under existing approvals
Ore Transport	• Continued transport of up to 800,000 tonnes per annum of ore via Kidman Way to the Peak Complex for processing • Increase in heavy vehicle trips from 25 per day (50 movements) to 50 per day (100 movements)
Tailings Storage	• No tailings storage undertaken at the complex. Continued placement of tailings at the Peak Complex tailings storage facility under existing approvals
Mine and Ancillary Infrastructure	• Continued use of existing / approved surface infrastructure, including ventilation shafts, haul roads, stockpiles, administration areas and waste rock emplacement • Construction of a power line spur (up to 400 m in length) between an existing transmission line and approved ventilation shaft
Rehabilitation and Closure	• Rehabilitation of the complex to a safe, stable and non-polluting landform • Retention of a final void (New Cobar Open Cut pit) • Reconfiguration of waste rock emplacement area
Workforce	• Continued employment of up to 404 full-time equivalent (FTE) employees across both the New Cobar and Peak complexes, shared to suit mining production requirements • 141 FTE construction jobs
Hours of Operation	• Mining activities - 24 hours a day, 7 days a week • Ore transport – 7 am to 6 pm, 7 days a week • Construction – 7 am to 6 pm, Monday to Friday; 8 am to 1 pm Saturday.
Capital Investment	• Approximately $66 million

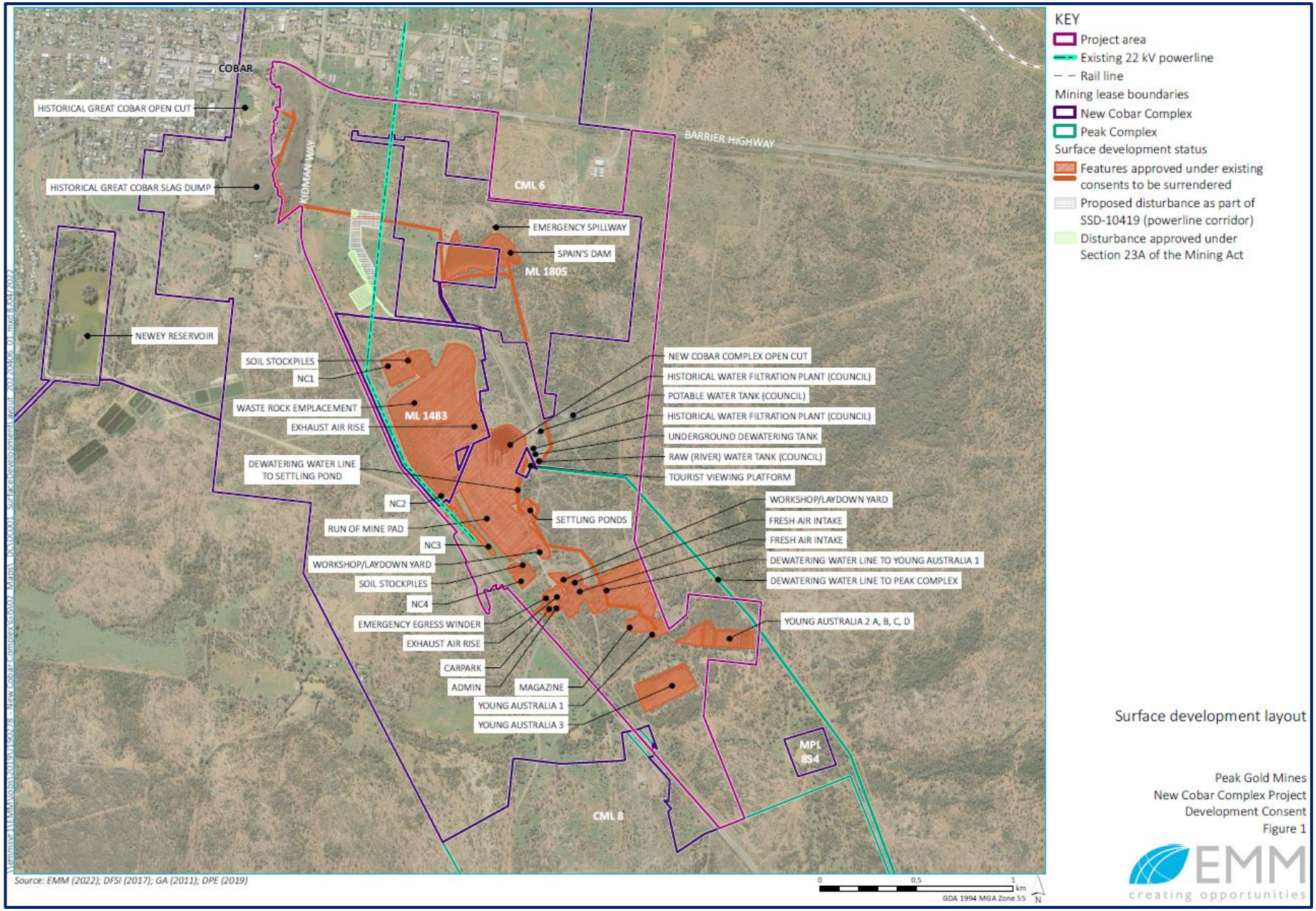

Figure 2 | Existing and Proposed Surface Features Layout (Source: EMM 2022)

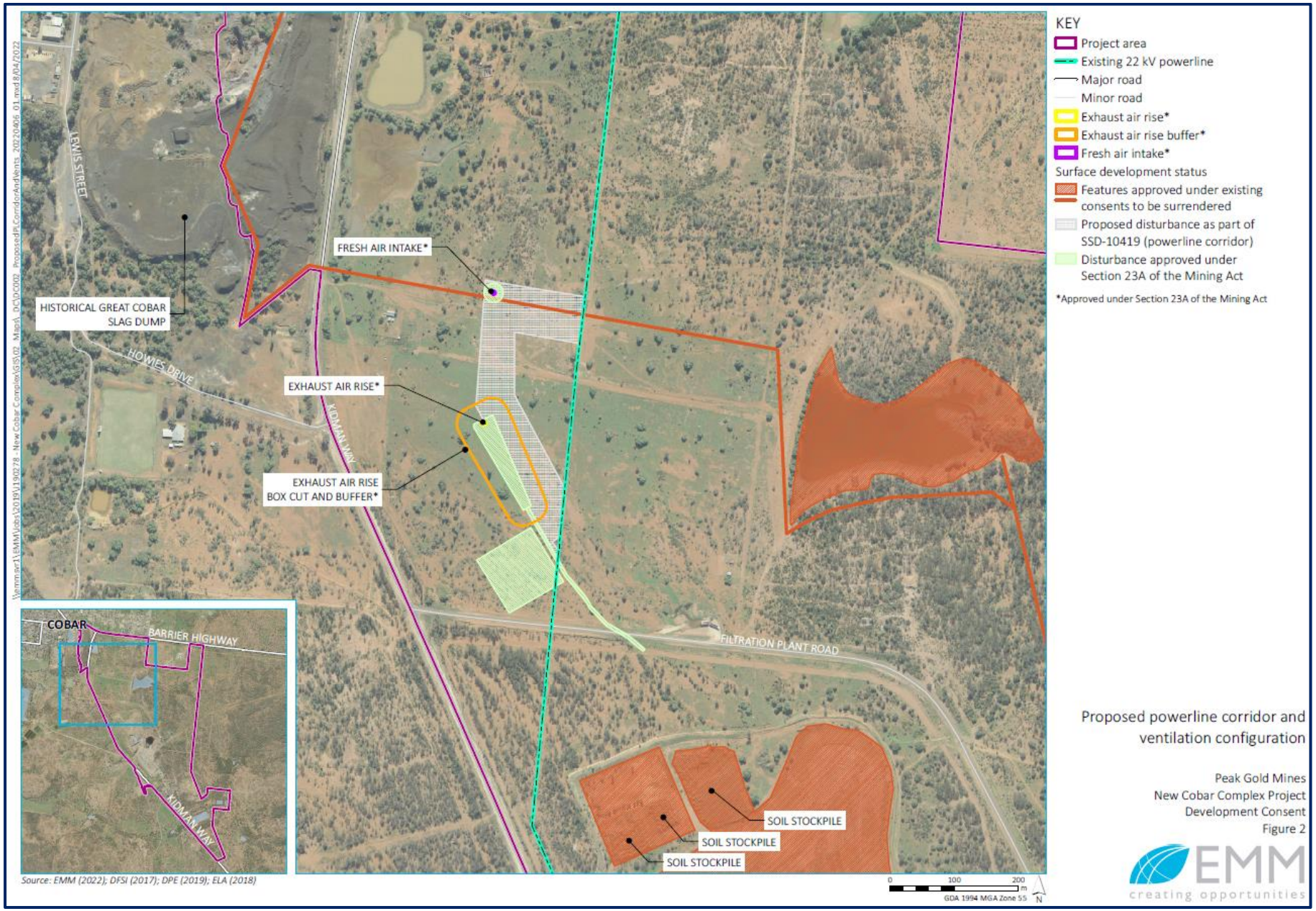

Figure 3 | Proposed Surface Infrastructure (Source: EMM 2022)

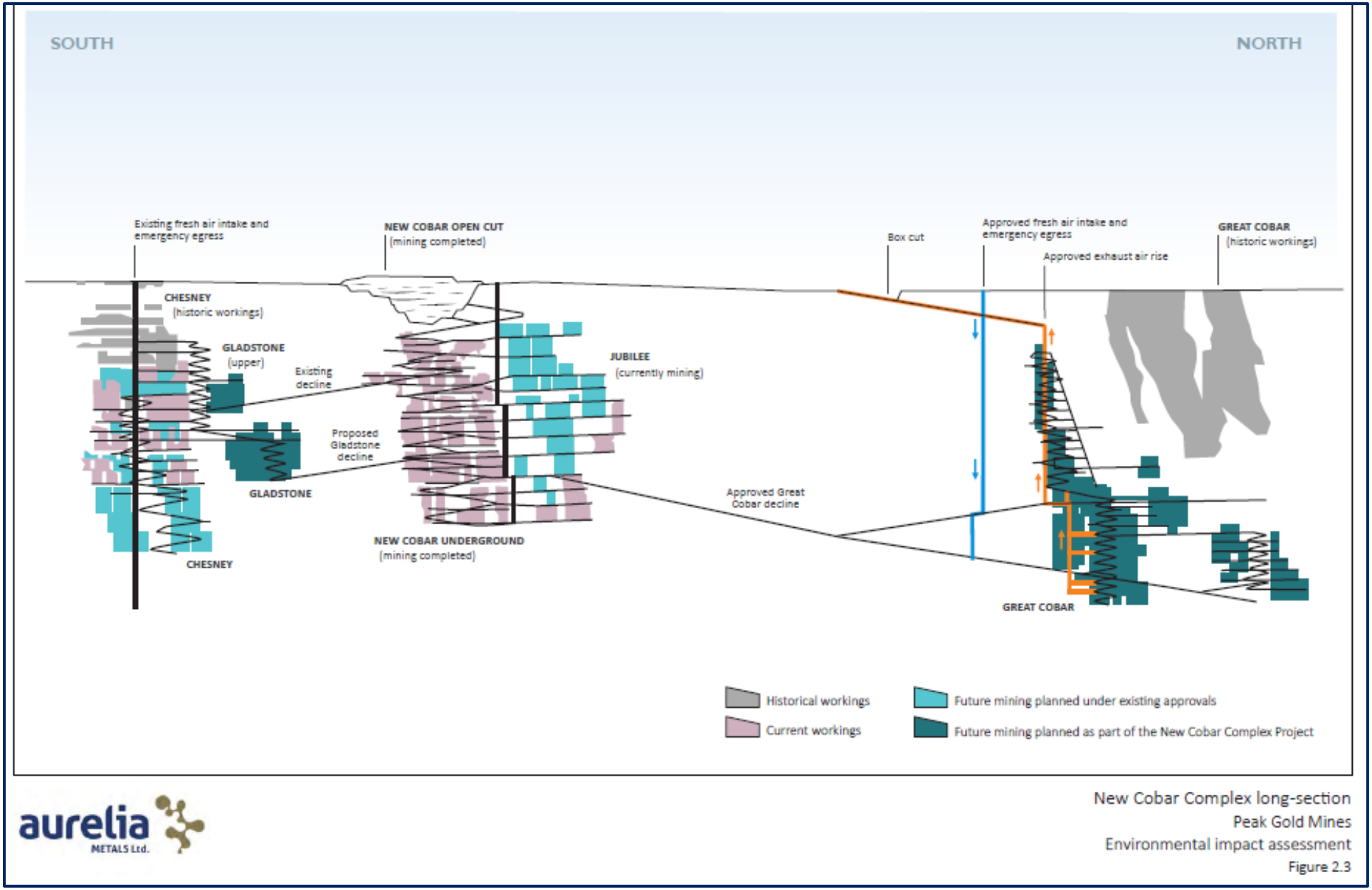

Figure 4 | Existing and Proposed Project Section View (Source: EMM 2021)

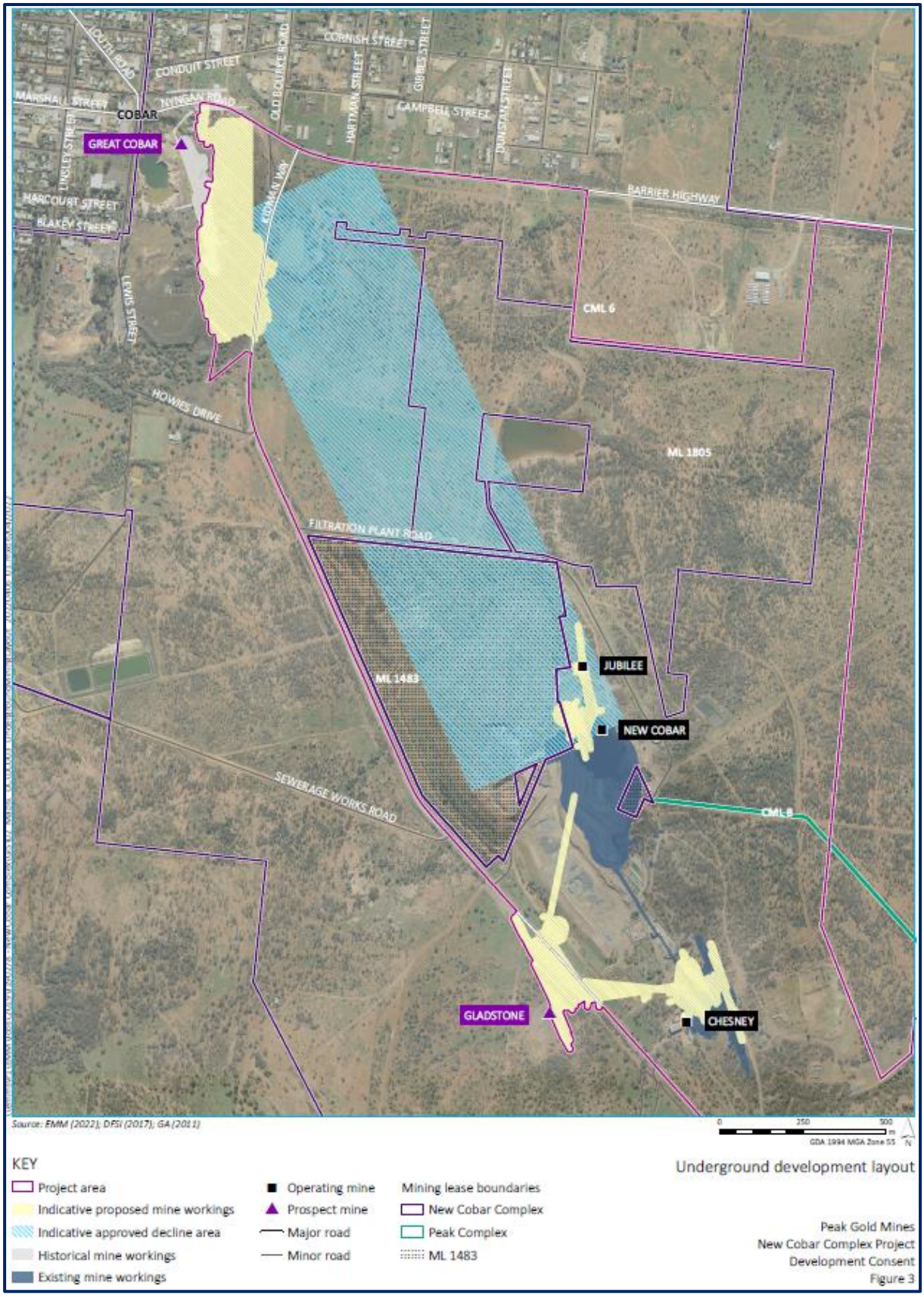

Figure 5 | Existing and Proposed Project Mining Locations (EMM, 2022)

3 Strategic Context

3.1 Project Setting

The area around Cobar comprises a series of high-grade ore bodies dominated by gold, silver and base metals. Since mining began in the area in 1870, more than 200,000 tonnes (t) of copper and 3,000,000 oz of gold has been produced.

The local landscape provides evidence of the extensive historical mining that has occurred around Cobar, including the remains of historic mining settlements, stockpiles, dams, settling ponds and open cut pits.

PGM commenced mining at the Peak deposit in 1991 producing copper, lead and zinc concentrates and gold/silver dore. Mining at the New Cobar Complex commenced in 2000 with the New Cobar Open Cut, before transitioning to underground mining in 2004.

The complex is located immediately south and southeast of the Cobar township, and PGM's mining lease encompasses much of the town (refer to **Figure 1**). Land uses other than mining surrounding the surface infrastructure associated with the complex include low intensity grazing and rural residential.

The closest residence to surface mining activities lies approximately 900 m south west of the complex boundary. The Great Cobar Heritage Centre, built in 1910 as administration offices for the Great Cobar Copper Mine, and now operating as a museum, is located adjacent to the proposed underground workings in the Great Cobar deposit at the north-western complex boundary.

The regional topography generally exhibits flat to undulating terrain with several ridgelines and peaks. The complex itself is situated on a ridgeline trending north-north west that rises approximately 50 m above the surrounding landscape.

Fort Burke Hill, the highest point along the ridgeline is located immediately east of the New Cobar Open Cut and is a popular local lookout. A viewing platform has been constructed on Fort Burke Hill that provides a unique view into the open cut pit.

3.2 Resource and Economic Context

The *Future of Minerals in NSW Report 2020* notes that global demands for metals and other key raw materials is expected to increase over the next 40 years because of economic, urban and technological development and the transition towards low-carbon alternatives including solar panels, wind turbines and electric vehicles. The *NSW Critical Minerals and High-Tech Metals Strategy (2021)* identifies copper as a critical mineral for a range of future industries including renewables, recycling and waste management, advanced manufacturing and aerospace.

During the 2020/2021 financial year, NSW accounted for 12% (1.2 M oz out of 10.3 M oz) of Australia's gold production. PGM's facilities produced 5% (55,000 oz) of this total, making it the 4th largest gold producer in NSW, with Cadia Valley Operations being the largest (Department of Regional NSW – Mining, Exploration and Geoscience, 2021). PGM advise that higher demand and prices for gold and copper makes the extraction of other base metals more economically viable.

The existing combined workforce of both the Peak and New Cobar complexes is considered a significant employer in the region. The Department's *Far West Regional Plan 2026* (2017) notes that the mining industry is the primary economic driver for many towns in the Far West Region, including Cobar, Broken Hill, Lightning Ridge and White Cliffs. Mining and agriculture contribute almost 40 per cent to the Far West Region gross regional product.

4 Statutory Context

4.1 State Significance

The Project is declared to be State Significant Development (SSD) under section 4.36 of the EP&A Act, as it is development for the purpose of mining with a capital investment value of more than $30 million, which is specified in clause 5 of Schedule 1 to *State Environmental Planning Policy (State and Regional Development) 2011* (the SRD SEPP).

The Minister for Planning is the consent authority for the Project, however, under the Minister's delegation of 9 March 2022, the Director Resource Assessments may determine the Project because there were fewer than 15 unique submissions by way of objection, Council did not object to the proposal and PGM did not make any political donations.

4.2 Permissibility

The Project is located on land zoned RU1 Primary Production and IN1 General Industrial under the *Cobar Local Environmental Plan 2012* (Cobar LEP). The *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (the Mining SEPP) ensures that the Project is permissible with consent, as development for the purposes of underground mining is permissible on any land.

4.3 Integrated and Other NSW Approvals

Under section 4.41 of the EP&A Act, several approvals are integrated into the SSD approval process and consequently are not required to be separately obtained. These include:

- approvals relating to heritage required under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977*; and
- certain water approvals under the *Water Management Act 2000* (WM Act).

Under section 4.42 of the EP&A Act, several other approvals are required but must be substantially consistent with any consent granted for the Project. These include:

- a mining lease under the *Mining Act 1992*;
- consents under the *Roads Act 1993*;
- an Environment Protection Licence (EPL) under the *Protection of the Environment Operations Act 1997*;
- notification under the *Work Health and Safety (Mines) Act 2013* for high risk activities, including emplacement of reject materials; and
- water access licences under the *Water Act 1912* and/or the WM Act.

PGM currently holds relevant leases and licences under these Acts and can obtain any other licences for the Project where required. The Department has consulted with the relevant government authorities responsible for these other approvals (see **Section 5**), and considered the relevant issues relating to these approvals in its assessment of the development (see **Section 6**).

4.4 Mandatory Matters for Consideration

Under section 4.40 of the EP&A Act, the consent authority is required to evaluate the merits of the Project against the relevant matters for consideration set out in section 4.15 of the EP&A Act prior to making its determination. This includes:

- the provisions of any environmental planning instruments (EPIs);
- the terms of the Applicant's offer to enter into planning agreements and whether it should impose a condition on the Project;
- the likely impacts of the Project, including the environmental impacts on both the natural and built environments, and social and economic impacts in the locality;

- the suitability of the site for the Project; and
- the public interest, which includes considering the relevant objects of the EP&A Act and Ecologically Sustainable Development (ESD).

The Department has considered all of these matters in its assessment of the Project and provides a summary in this report. Further consideration has been provided in **Appendix G**.

4.5 Amendment Report

PGM submitted a request to the Department in February 2022, seeking amendments to the Project to include additional lots in the schedule of land subject to the application, originally omitted due to an administrative error.

PGM provided an Amendment Report noting additional environmental assessment was not required given the minor nature of the amendment. The Department accepted PGM's request to amend the project in accordance with clause 192(2) of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

4.6 Surrender of Development Consents

Section 4.63 of the EP&A Act (voluntary surrender of development consent) provides that if a development consent is surrendered as a condition of a new development consent and the new consent includes continuation of development that was authorised, then the consent authority:

- is not required to re-assess the likely impact of the continued development to the extent that it could have been carried out but for the surrender of the consent;
- is not required to re-determine whether to authorise that continued development under the new development consent (or the manner in which it is to be carried out); and
- may modify the manner in which that continued development is to be carried out for the purpose of the consolidation of the development consents applying to the land concerned.

If the Project is approved, PGM would surrender the existing relevant Council consents related to mining operations at the site, and all mining operations would be regulated under the new development consent.

The Department has recommended conditions that incorporate the relevant requirements of the approved operations.

4.7 Biodiversity Development Assessment Report

Section 7.9(2) of the *Biodiversity Conservation Act 2016* (BC Act) requires all applications for SSD to be accompanied by a Biodiversity Development Assessment Report (BDAR) unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values.

On 29 October 2020, a BDAR waiver was granted for the Project as it was determined that it is not likely to have any significant impact on biodiversity values. This is because surface infrastructure components of the Project would be constructed in areas of cleared land and underground mining impacts are not predicted to affect native vegetation, groundwater dependent ecosystems or terrestrial plant communities.

5 Engagement

5.1 Public Engagement and Consultation

The Department publicly exhibited the EIS from 25 February until 24 March 2021 (28 days). The exhibition was advertised in the *Cobar Weekly* and the EIS was made available on the Department's website and at the Council offices, Cobar TAFE and Library.

The Department consulted with relevant government agencies and Council throughout its assessment. Department representatives met with Council officers on 8 March 2022 and visited the site and surrounding areas.

5.2 Submissions Summary

During the exhibition period, the Department received 12 submissions from special interest groups and members of the public, of which, four objected to the Project. The majority of public submissions were from residents of the Cobar community. The Department also received advice from 17 government agencies, including Council.

A summary of the submissions and agency advice is provided in **Table 3**. Submissions and agency advice are available on the Department's website (see **Appendix B and Appendix E,** respectively**)** and key issues raised are summarised below.

Table 3 | Summary of Submissions / Advice

Submission	Total	Support	Object	Comment
Government agencies	**17**	-	-	17
Special interest groups	**2**	2	-	-
General public	**10**	5	4	1
Within 5 km of Project	7	3	4	-
>5 km of Project	3	2	-	1
Total	**29**	**7**	**4**	**18**

Key Issues - Agency

No government agencies objected to the Project, however several commented on various aspects of the Project and recommended conditions of consent. A summary of the key comments made by agencies is provided in **Table 4**. The Department's consideration of these matters is provided in **Section 6.**

Table 4 | Agency Advice

Agency	Advice
Water Group	• Requested a peer review of the groundwater model and that the groundwater assessment be updated to correct the location and reassess potential impacts on a nearby basic landholder bore. • Accepted the groundwater assessment peer review but raised residual concern regarding the correct location of the nearby basic landholder rights bore. • Recommended various measures to be implemented post-determination, including an additional piezometer, updated Water Management Plan, and a detailed water balance.
Environment Protection Authority	• Requested additional information relating to the noise and air quality assessments, including clarification of predictions, modelling assumptions and mitigation measures. • Accepted the additional information provided by the applicant and advised that a variation to the existing Environment Protection Licence (EPL) 3596 would be required.

Agency	Advice
	• Recommended a range of conditions relating to noise and air quality, including noise and extraction limits.
BCS	• Advised that a BDAR waiver had been issued for the Project and no further comment.
Mining, Exploration & Geosciences	• Advised that the Project would be an efficient use of resources that would provide return to the NSW Government by way of royalties and local / regional economic stimulus. • Advised that the applicant holds the appropriate mining titles required for the Project and that the objects of the *Mining Act 1992* are satisfied.
Resources Regulator	• Requested further information relating to the nominated post mining land use and the final landform design, including the extent of changes to the waste rock emplacement to minimise exposure of potentially acid-forming material. • Accepted additional information provided by the applicant but noted that a risk-based approach to rehabilitation would be developed under conditions of the relevant mining authorisation. • Raised no concerns regarding mine safety but advised of particular requirements relating to High-Risk Activity and mine egress. • Recommended that the Department further consult with the Regulator and Council to ensure that rehabilitation conditions are consistent with those of the Peak Gold Complex, being an integrated operation.
Transport for NSW	• Requested further information regarding the traffic generation impacts of the development and the use of a non-operational rail corridor within the Project area. • Accepted additional information provided by PGM, however, recommended: – upgrade works to three intersections including the New Cobar Complex and Peak Complex site access intersections and the construction access intersection; – conditions regarding the use of the non-operational rail corridor; and – general operating and management conditions including, a Traffic Management Plan and Drivers Code of Conduct.
Heritage NSW	In relation to Aboriginal cultural heritage: • acknowledged that overall harm to Aboriginal objects would be minimal and accepted PGM's proposed management strategies; and • recommended PGM undertake further research of the post contact shared histories associated with the nineteenth century Cornish Town mining village. In relation to historic heritage: • advised it supported the findings and recommendations of the Heritage Impact Assessment; and • recommended the implementation of a Heritage Management Plan.
NSW Health	• Noted that the methodology used to prepare the Human Health Risk Assessment was consistent with relevant guidelines, that potential impacts were assessed using a validated model, and that estimated exposure to metals were well below guidelines. • Encouraged consideration of EPA's comments relating to the inclusion of all relevant emissions sources from the complex and cumulative impacts with the Peak Complex. • The Department notes that the EPA was satisfied with the additional information provided by the applicant relating to emissions sources and accepted the conclusions of the air quality assessment.
NSW Rural Fire Service	• Recommended a Fire Safety Study be prepared or updated detailing fire prevention and mitigation measures for all credible fire hazards. • Recommended implementation of suitable asset protection zones.

Agency	Advice
Cobar Shire Council	• Advised of its support for the Project subject to suitable conditions to protect the environmental, social and economic attributes of the local community. • Sought additional justification for increased truck movements and consideration of alternatives to truck transport of ore. • Recommended conditions relating to the protection of Council infrastructure, road maintenance contributions, traffic safety, securing water supply for the Cobar District Rugby Club, blasting, monitoring reporting and community engagement. • Sought development contributions in the form of a voluntary planning agreement (VPA). • Reiterated its initial recommendations following review of the PGM's submissions report.

Key Issues – Community and Special Interest Group Submissions

Supportive submissions highlighted the benefits of the Project associated with ongoing employment opportunities and the importance of mining in sustaining the local economy and community.

The key concerns raised in objections to the Project included:

- damage to homes and buildings from blasting vibration;
- dust emissions and impacts to health associated with lead and other heavy metals;
- the impact of increased heavy vehicles on road safety and traffic noise;
- impacts on groundwater resources;
- the potential for increased noise at night; and
- a lack of economic benefits to the Cobar township.

The Cobar District Rugby Union Club advised of its support for the Project, however, raised concern regarding the adequacy of the 'make good' commitments made by PGM to rectify water losses, particularly in times of drought. The club also expressed concerns regarding potential impacts on club facilities from vibration, land value and dust emissions.

The Department's consideration of these matters is provided in **Section 6**.

5.3 Response to Submissions and Additional Information

On 20 August 2021, PGM provided a Submissions Report to the Department (see **Appendix C**). The Submissions Report provides a response to the issues raised in submissions received during the exhibition period, including government agency advice.

During the assessment process, the Department requested that PGM provide additional clarification and information on a range of matters, including:

- details of the proposed Voluntary Planning Agreement with Council;
- existing development consents proposed for surrender and the continued relevance of any conditions under these consents; and
- additional responses to agency advice received following receipt of the Submissions Report, including matters relating to water, rehabilitation, traffic, a dis-used rail corridor and the human health risk assessment.
- Additional agency advice and additional information provided by PGM is provided in **Appendix E** and **F**, respectively.

6 Assessment

The Department considers that the Project is not as complex to assess compared with many other underground mineral mining projects, for the following reasons:

- the mine has been operating since 2000 with existing measures to control or reduce impacts;
- the underground stope mining and backfill method utilised at the complex to date has demonstrated negligible surface subsidence impacts;
- the Project does not involve any changes to the proposed rate of ore extraction and very limited changes to the mine's surface facilities;
- the Project does not involve ore processing or tailings management which are undertaken at the Peak Complex under a separate consent;
- there are very few significant natural features within the local landscape; and
- there are very few residents located in the area surrounding the surface facilities.

The Department has assessed the full range of potential impacts of the Project, but considers that the key assessment issues relate to groundwater drawdown, management of potentially acid-forming (PAF) waste rock, dust and heavy metals exposure. These issues are assessed in **Sections 6.1** to **6.3** below. The assessment of other relevant impacts is provided in **Section 6.4**.

6.1 Water Resources

The Project's key water impacts relate to groundwater drawdown from mine dewatering activities and management of potentially acid forming (PAF) waste rock that could result in acidic drainage.

The EIS included groundwater and surface water assessments prepared by EMM Consulting (refer to Appendix I and J of the EIS and Appendix D of the Submissions Report). Following the exhibition of the EIS and in response to comments from the Department's Water Group (DPE Water), the groundwater assessment was updated to correct the location of a basic landholder rights bore (GW309105) and reassess potential impacts, and peer reviewed by Mr Hugh Middlemis.

DPE Water and Mr Middlemis considered that the level of data collected aligned with a Class 1 assessment under the *Australian Groundwater Modelling Guidelines* (Barnett et al, 2012) and was adequate to inform the groundwater assessment. This is due to the low-risk nature of the site and its surrounds, including a low productivity water source, historical brownfield mining setting and minimal sensitive receivers within the Project's vicinity. However, both recommended the implementation of an upgraded monitoring network if the Project is approved.

Existing Setting

The complex is located within the semi-arid Darling River Catchment. There are two second order watercourses that flow ephemerally through the north and south of the complex. The dry climate of the region sees low rainfall and high rates of evaporation which results in minimal rainfall recharge to groundwater sources (i.e. approximately 0.15% of annual rainfall).

The existing surface water management system includes the diversion of clean water from upstream channels around mine infrastructure and the capture, storage and re-use of mine-affected water. Key water storages on the site include Spain's Dam to the north, three storage dams (Young Australia 1, 2 and 3) to the south and four settling ponds (NC1-4) along the western boundary (refer to **Figure 3**).

Water quality in the vicinity of the project area is brackish to saline with electrical conductivity increasing with depth. The water table is within the upper weathered fractured rock between 21 m and 32 m below ground level. This groundwater source is classified as a less productive water source and there are only 2 privately owned registered bores in the vicinity of the Project.

Monitoring data indicates that regional groundwater levels remain relatively stable with minimal seasonal fluctuation. Minimal widespread drawdown indicates that groundwater levels have not been significantly affected by mining at the complex. However, long term monitoring at the Peak Complex indicates high vertical connectivity within deeper aquifers, with groundwater levels fluctuating by up to 40 m in response to mining activities.

Groundwater Drawdown

Key water impacts of the Project are related to groundwater inflows to mining areas and associated drawdown of the groundwater table. It is predicted that inflows would increase to a peak of 854 ML/year by 2026 and subsequently reduce to 11 ML/year by the end of mining. Peak inflows in 2026 correspond to mining at the greatest depth of the Great Cobar deposit, with inflows decreasing in the second half of the mining operation.

Based on the predicted mine water inflows, maximum groundwater drawdown of up to 30 m is predicted in areas above the Great Cobar deposit and south of the New Cobar Open Cut. Due to the low recharge and hydraulic conductivity of the fractured rock aquifer, drawdown is predicted to occur during mining and post mining for up to 20 years.

Drawdown is predicted to be limited in areas to the east of the complex as a result of the Great Chesney Fault (i.e. approximately 0.1 m drawdown predicted), and a 2 m drawdown contour is predicted to extend approximately 1 km from the centre of the Great Cobar deposit.

Under an existing water allocation, PGM can source water from the historic Great Cobar shaft to supplement water supply for site demands and additional groundwater modelling scenarios were run to account for water extraction from the shaft in addition to mine water inflows. Using a conservative assumption that all external water requirements would be sourced from the shaft, modelling indicated that the 2 m drawdown contour could extend an additional 700 m. **Figure 6** below depicts the maximum drawdown contours under both of these scenarios.

Registered bore users

As outlined above, there are only two registered bores within the vicinity of the Project:

- GW803422 – located approximately 1 km to the west of the complex boundary and used by the Cobar District Rugby Club as a back-up source for field irrigation; and
- GW309105 – located 9 km southwest of the complex and outside the modelled 2 m drawdown contour.

As a result of mine water inflows, the Cobar District Rugby Club bore (GW803422) is predicted to experience drawdown of up to 12.5 m by 2050. Additional water supply pumping from the historical Great Cobar workings has the potential to increase drawdown at the bore by a further 5 m, up to 17.5 m. The bore is currently drilled to a depth of 22 m and therefore it is likely that the water supply would be impacted.

This level of predicted drawdown exceeds the NSW Aquifer Interference Policy's minimal impact requirement of 2 m cumulative decline at a water supply work, and as such, PGM has committed to providing make good arrangements to supplement the affected water supply. Proposed make-good arrangements include deepening the existing bore, drilling a new bore or providing supplementary water to offset the loss. The Department notes concerns from the Cobar Rugby Club about the ability of PGM to provide these compensatory supplies during times of drought.

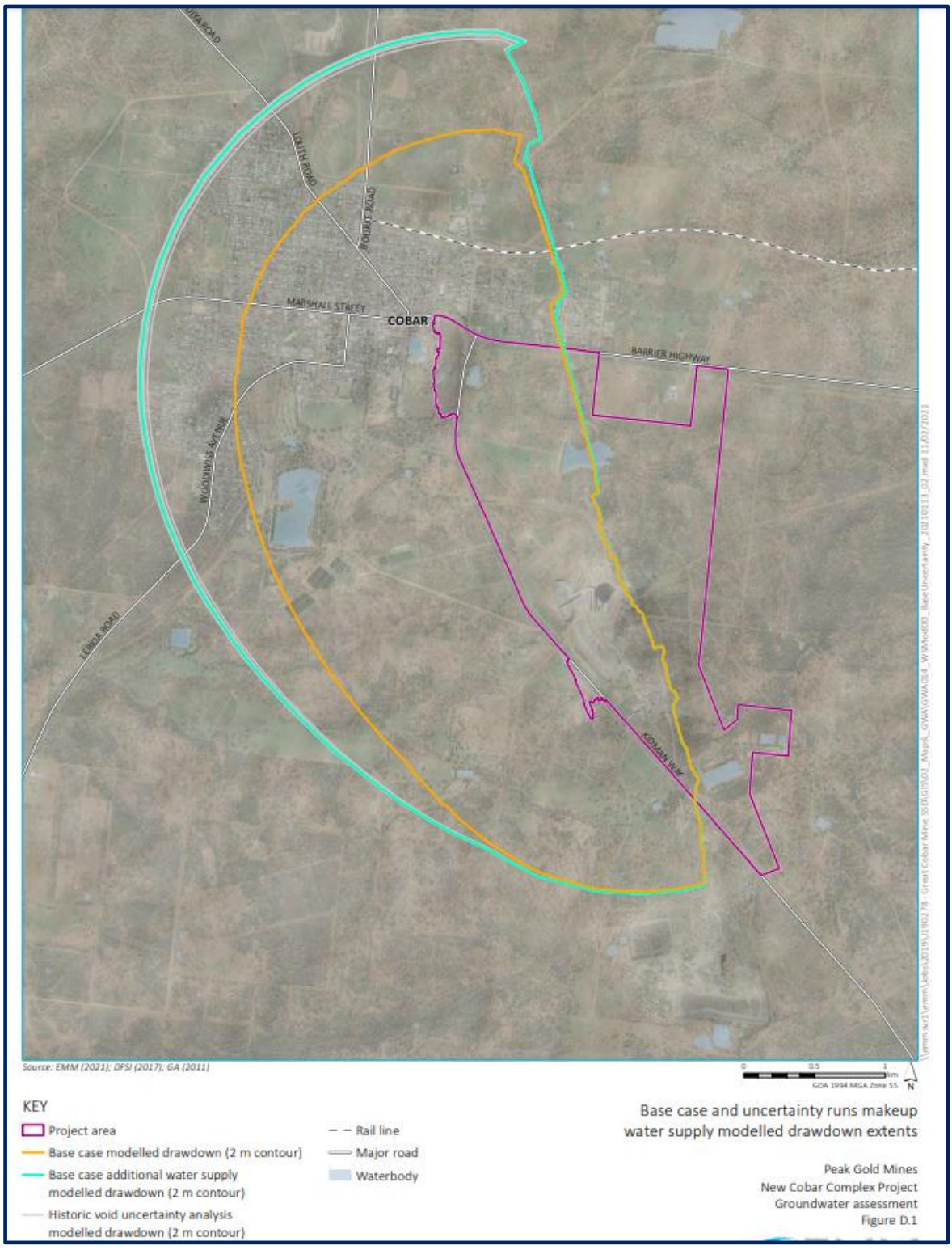

Figure 6: Maximum Drawdown Contours (Source: EMM,2021)

The Department notes that the use of this bore is a secondary option for field irrigation during times of drought or disruption and accepts that suitable make-good arrangements could be readily established to supply water to the rugby club. The Department has recommended conditions that would ensure impacts are appropriately monitored, mitigated and compensated through make good arrangements.

Long-term stabilisation

Following mining, it is predicted that groundwater levels would recover and stabilise over a period of 270 years. Underground voids would act as groundwater sinks for approximately 10 years until

equilibrium is reached and transition to a flow through system. The New Cobar Open Cut pit would remain as a long-term sink in the groundwater system and a permanent groundwater depression.

Following aquifer recovery, it is predicted that the pit would gradually fill with water to a level up to 158 - 208 m AHD, well below any spill point to the surrounding environment. The development of a pit lake, however, is highly dependent on rates of evaporation, rainfall and groundwater inflows and further groundwater monitoring, model calibration and modelling is proposed as mining progresses.

Should a pit lake develop, there is potential for high salinity levels to accumulate as a result of minimal surface water inflows and high evaporation rates. However, changes in groundwater quality would be localised as flow paths would be directed towards the pit as a groundwater sink.

The Department considers that final void outcomes can be further evaluated and progressed post determination, in line with post-mining land use options. The Department has recommended a condition to this effect.

Potential Acid-Forming Waste Rock

Waste rock from mining activities has the potential to contain PAF characteristics. Exposure of PAF waste rock can cause acidic drainage which poses risks to both surface and groundwater quality.

The groundwater assessment concludes that the Project's potential impacts on groundwater quality is low, and that there would be no change to the beneficial use category of the Lachlan Fold Belt aquifer (i.e. industrial / recreational uses). This is because a large proportion of the rock would be non-acid forming, and any changes in groundwater quality from the exposure of PAF rock underground would be localised with flows directed towards the New Cobar Open Cut pit as a terminal sink.

Risks of acid mine drainage are currently encountered at both the New Cobar and Peak complexes and PGM propose to continue to implement management measures to minimise adverse water quality impacts. These measures include:

- classification of waste material to identify appropriate use and handling including management and mitigation measures for non-acid forming (NAF) and PAF waste rock material
- capping or progressive return of PAF waste rock that is brought to the surface with the preferential use of PAF waste rock to backfill completed stopes;
- managing runoff from waste rock emplacement areas through the internal water management system;
- maximising water re-use and maintaining nil discharge except during rare overflow events; and
- monitoring water quality parameters of groundwater and surface water, on and offsite.

Waste rock is currently managed in accordance with an approved Waste Rock Management Plan, that forms part of the Mining Operations Plan. Waste rock would continue to be managed in accordance with this plan incorporating the measures identified above.

The Department considers that the appropriate management of PAF waste rock is critical in avoiding adverse water quality outcomes. The Department accepts that PGM's has existing and proposed measures to manage acid mine drainage risks, however, it is considered that strict controls should be in place to monitor and regulate these activities.

Specifically, the Department has recommended conditions of consent including water quality and waste rock emplacement performance measures, detailed plans for the design and management of waste rock material and emplacement and comprehensive surface and groundwater monitoring programs as part of a Water Management Plan.

Water Balance and Licensing

Under existing operations, water is sourced from mine water inflows and rainfall/runoff. Captured water is either stored in settling ponds and dams on site or is pumped to the Peak Complex for use in processing. PGM currently holds a Water Access Licence (WAL) for 880 ML/year of groundwater within the Lachlan Fold Belt water source.

PGM is also authorised to source water from the:

- Burrendong Dam – *the Macquarie and Cudgegong Regulated Rivers Water Source* – under a shared allocation with other mining operations in the vicinity; and
- historic Great Cobar shaft – under a Water Supply Works Approval issued in December 2019.

PGM advises that water supply from these external sources would only be used when inflows are not sufficient to meet site water demands.

Demand for external water will vary across the life of the operation. **Figure 7** shows the predicted external water requirements over the life of the Project, based on the 12-year mining schedule and historical climate data. This indicates that there would be greater demand for external water supplies during later years of the mining operation, due to a predicted decrease in mine water inflows.

The external water supplies available are considered adequate to provided water security for the Project, particularly as:

- there is low probability of Burrendong dam experiencing low water availability, and even if availability is low, PGM would still have some allocation; and
- the volume of water in the Great Cobar shaft is considered to be enough to supply process water requirements for most of the Project life, with PGM approved to extract up to 400 ML/year.

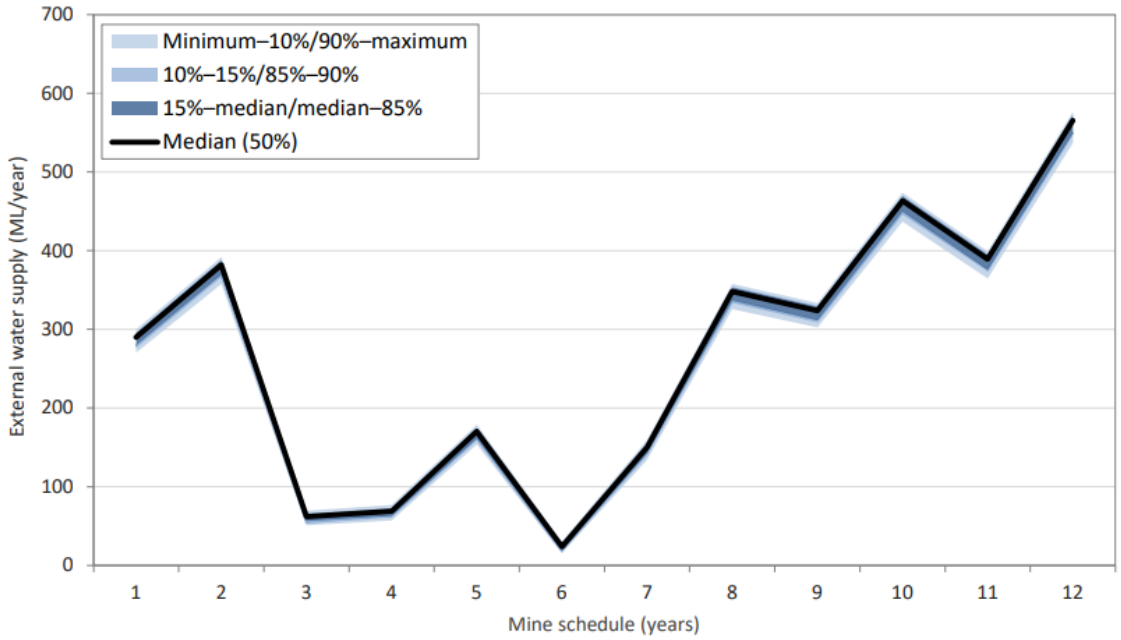

Figure 7: Probability Assessment of External Water Supply (Source: EMM, 2021)

DPE Water raised no concern with PGM's existing water allocations and the Department considers that water use associated with the Project is unlikely to have a significant impact on water availability and supply in the applicable water sources. However, both DPE Water and Mr Middlemis recommended improvements to the water monitoring network to validate predictions and ensure sufficient water allocations are in place.

The Department has recommended conditions requiring PGM prepare and implement a comprehensive groundwater monitoring program, including a program to validate the water balance and groundwater model every three years.

Surface Water

Except for managing the potential water quality risks associated with PAF material described above, risks to surface water associated with the Project are considered minimal. PGM currently implements a Water Management Plan that includes a surface water monitoring program and erosion and sediment control practises in accordance with *Managing Urban Stormwater: Soils and Construction (Landcom 2004)* (i.e. the Blue Book).

The site will continue to be operated as a nil discharge site, except during large rainfall events. Overflows of approximately 9ML/year are predicted to occur from Spain's Dam during a 90th percentile rainfall year. Discharges are regulated through the site's EPL.

Overall, adverse impacts to water quality and streamflow regimes are not expected as:

- overflow events are predicted to be infrequent (i.e. approximately once every 10 years) and volumes would be small in comparison to the receiving waterway catchment; and
- receiving waterways would receive runoff from the broader catchment areas resulting in mixing of various water qualities.

The EPA did not raise any issues regarding surface water quality, and the Department considers that surface water issues can be appropriately managed in a similar manner as the existing mine. The Department has recommended conditions requiring the preparation of a Surface Water Management Plan, including objective and performance criteria for investigating downstream and flooding impacts.

Conclusion

The Project is located in a historical brownfield mining setting with minimal sensitive receivers in the vicinity. While drawdown is predicted to occur, the Project would be unlikely to adversely impact the regional groundwater table or groundwater quality in the vicinity of the site. A single back-up irrigation bore at the Cobar Rugby Club would require compensatory water supply conditions.

Water quality risks of the Project predominantly relate to the proper management of PAF material and could be suitably managed under strict conditions of consent.

Additionally, PGM hold sufficient water allocation under Water Sharing Plans and external water sources to account for water take required for the Project.

The Department agrees with DPE Water and Mr Middlemis that there is opportunity to improve the monitoring network in which data can be used to validate hydrogeological predictions. The Department has recommended PGM prepare a comprehensive Water Management Plan, in consultation with DPE Water, that includes a groundwater monitoring program.

Overall, the Department considers that impacts on water resources would be relatively localised and could be appropriate managed under the recommended conditions of consent.

6.2 Air Quality

The air emissions of the Project are limited due to the underground nature of mining operations, and the processing of ore and tailings management being undertaken at the Peak Complex under a separate development consent. As a result, the key sources of air emissions for the Project would be associated with ventilation outlet emissions, the handling and haulage of ore material between the New Cobar and Peak complexes and wind erosion from stockpiles and exposed areas.

A number of submissions objecting to the Project raised concerns regarding dust, ventilation outlet emissions and associated health impacts. The presence of lead and other heavy metals in dust was of particular concern. This section provides a summary of the Department's consideration of potential air quality impacts. **Section 6.3** provides consideration of human health risks.

Methodology

The EIS included an air quality impact assessment undertaken in accordance with the EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA, 2016) and the *NSW Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments* (VLAMP).

The assessment was based on a worst-case operating scenario, involving maximum production and highly conservative ventilation outlet emission assumptions and included modelling of fine particulate matter (PM_{10} and $PM_{2.5}$), total suspended particulates, deposited dust and metals and metalloids contained within the waste, ore and tailings material.

The EPA initially raised some issues with the assessment methodology, however, was satisfied that these issues were addressed by additional information provided in the Submissions Report (see **Section 5.2**). The Department considers that an appropriately conservative approach has been taken to the air quality impact assessment.

Predicted Impacts

Air dispersion modelling predicts that there will be no exceedances of the NSW air quality impact assessment criteria at any privately owned assessment location for $PM_{2.5}$, PM_{10}, total suspended particulates, dust deposition, metals or metalloids, either from Project alone or cumulatively.

One mine-owned property in the Project area (R2), is predicted to experience exceedances of the cumulative 24-hour average PM_{10}, 24-hour average $PM_{2.5}$ and annual average $PM_{2.5}$ criteria.

The Project's maximum predicted 24-hour average PM_{10} concentrations are shown in **Figure 8**, with the area of land exceeding the impact assessment criteria concentration of 50 $\mu g/m^3$ shown in yellow. Receivers outside this yellow area are predicted to comply with the criteria.

The Department notes that the concentration of metals and metalloids associated with particulate matter emissions from the Project are predicted to be at least an order of magnitude (i.e. ten times) lower that the relevant impact assessment criteria.

No exceedances of the VLAMP criteria are predicted at any private residence or across more than 25% of any privately-owned land.

Results indicate that the Project will result in a minor incremental impact on local air quality when considered in the context of existing background concentrations, and no additional exceedances of the impact assessment criteria, beyond those associated with background dust, will occur at any of the non-mine related receivers as a result of the Project.

Figure 9 demonstrates the predicted minor contribution of existing operations (shown in black) and additional emissions associated with the Project (shown in yellow) to background 24-hour average PM_{10} concentrations (shown in blue) at the Cobar Rugby Club sport ground (receiver R18), the most impacted non-mine related receiver.

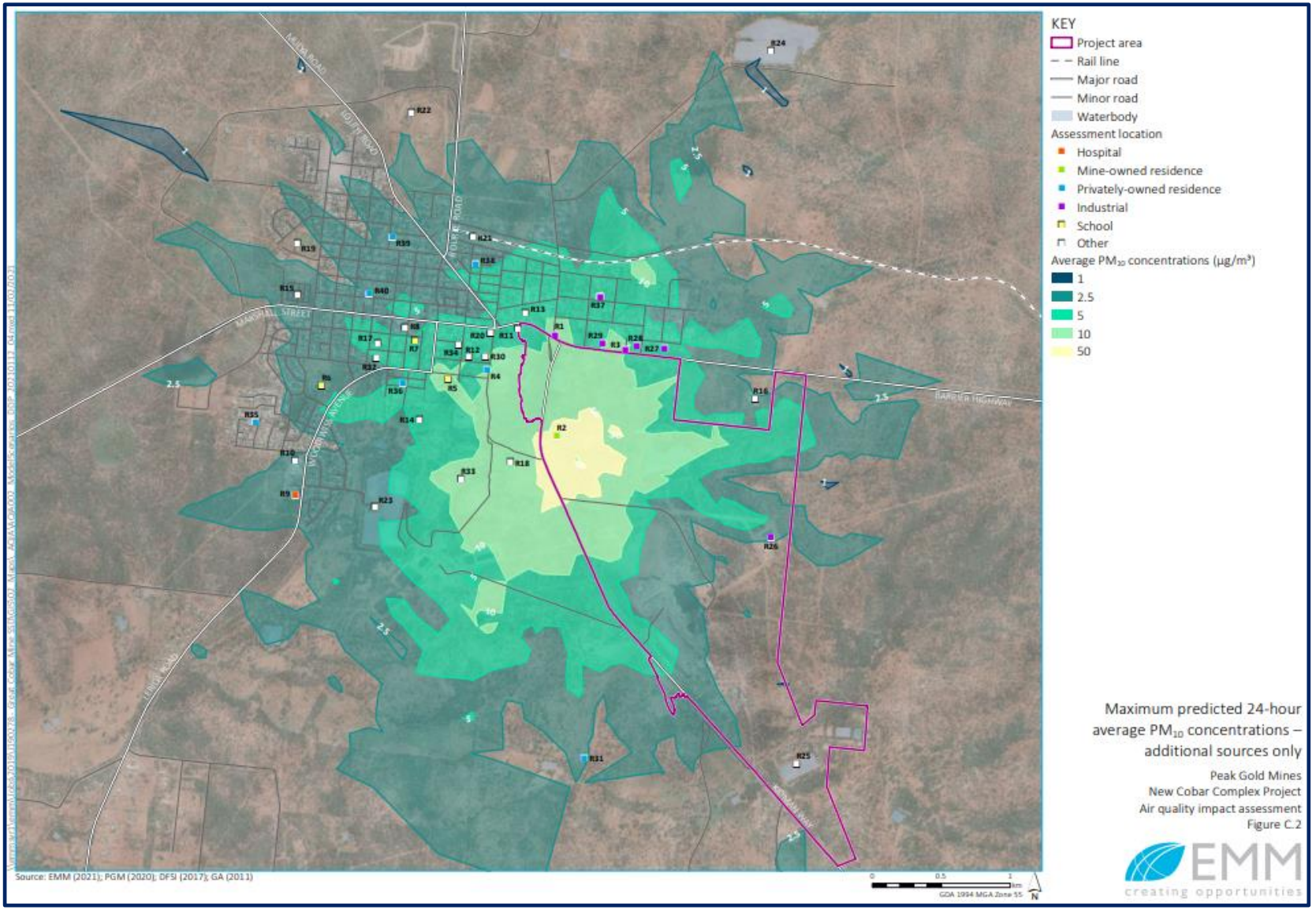

Figure 8 | Maximum predicted 24-hour average PM_{10} concentrations (Project only) and assessment locations (Source: EMM 2021)

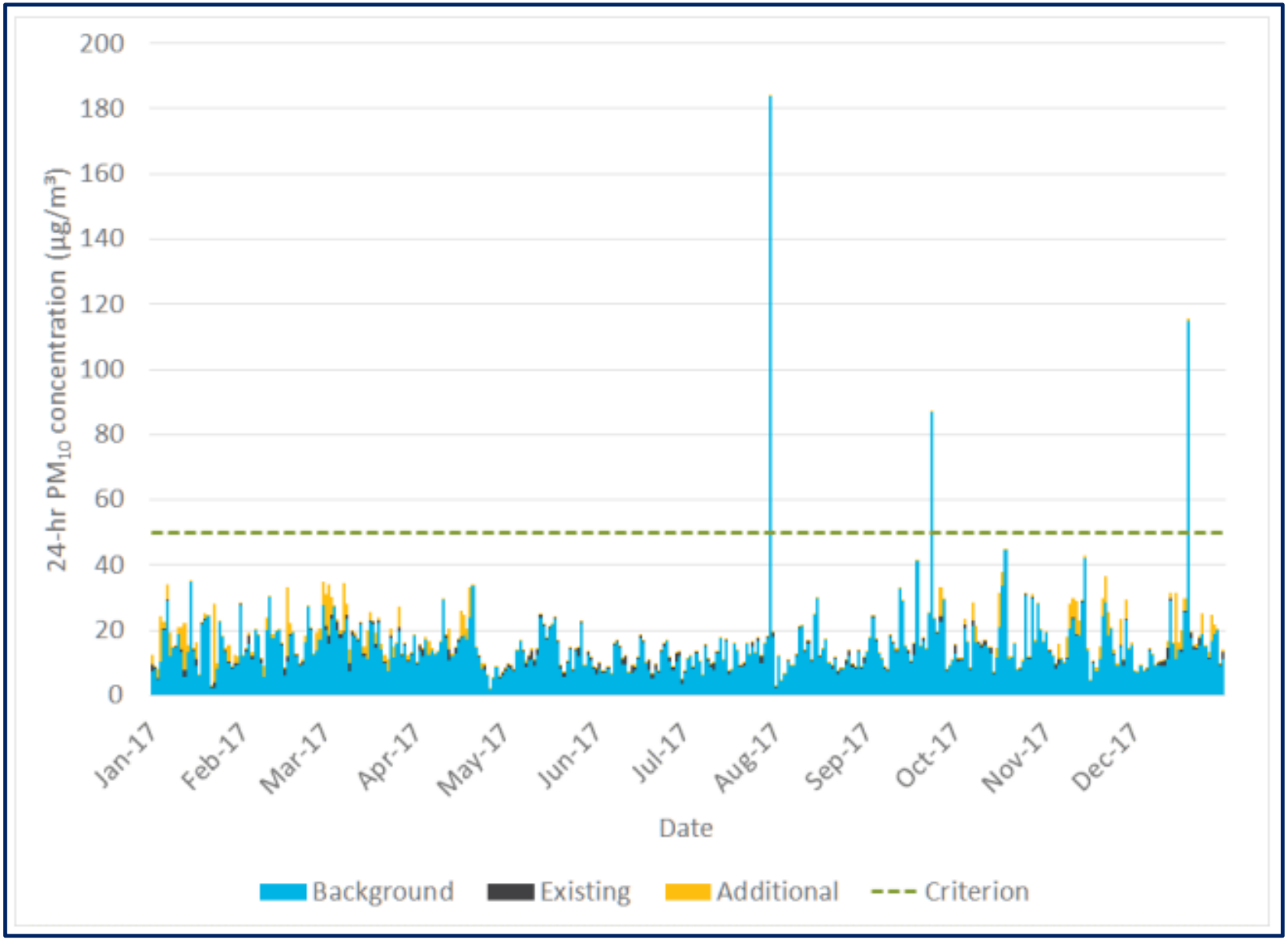

Figure 9 | Daily-varying cumulative 24-hour average PM_{10} concentrations – Cobar Rugby Club sport ground (R18) (Source: EMM 2021)

Management and Mitigation

A range of best practice air quality mitigation measures are currently implemented across the New Cobar and Peak complexes, including watering of haul roads, stockpiles and active operational areas, sealing of access roads, use of sprinklers underground and progressive rehabilitation of disturbed areas. In particular, the Department considers that the existing mitigation measures for haulage on unpaved roads and ventilation outlet emissions are appropriate for minimising emissions.

PGM operates an existing air quality monitoring network surrounding the New Cobar and Peak complexes that provides continuous monitoring of PM_{10}, periodic monitoring of TSP and dust deposition monitoring. The air quality monitoring network is supported by a meteorological monitoring station that, in combination with the continuous PM_{10} monitor, provides for identification of adverse meteorological conditions, implementation of proactive and reactive air quality management measures and investigation of potential exceedances of air quality criteria.

Conclusion

The Project will result in marginal increases in air emissions, however cumulative particulate, dust and metal concentrations are predicted to remain well below applicable criteria at offsite residences and other sensitive receivers. The Department considers that the risk of adverse impacts on air quality are low and can be adequately managed through the continued implementation of best practice mitigation, monitoring and management measures.

The Department has recommended conditions requiring PGM to:

- comply with contemporary air quality criteria and protocols for any air quality exceedances at the mine-owned residence within the project area;
- implement all reasonable and feasible measures to minimise dust emissions from the site;
- continue to implement a real-time dust monitoring program and an active air quality management system to identify and manage potential exceedances; and
- develop and implement a comprehensive Air Quality and Greenhouse Gas Management Plan in consultation with the EPA, NSW Health and the CCC.

6.3 Human Health

As would be expected within the Cobar mining precinct, a range of metals are present within the local geology. These metals are embedded in the dust generated by mining activities at the New Cobar and Peak complexes, as well as dust generated more broadly across the region by non-mining related activities.

Community submissions raised concerns regarding the health impacts of metals in dust generated by the Project and the effects on tank water quality.

A Human Health Risk Assessment (health assessment) was prepared as part of the EIS to assess potential health impacts on the local community associated with exposure to metals in dust and ventilation emissions. The health assessment was prepared in general accordance with guidance from the Environmental Health Standing Committee (enHealth 2012a), World Health Organisation (WHO 1999, 2010) and the US Environmental Protection Agency (US EPA 1989a, 1999a).

Methodology

The health assessment analysed the change in exposure of the local community to lead and other metals associated with dust generated by the Project, and assessed the change in exposure against relevant health guidelines.

A range of exposure pathways were considered, including incidental ingestion of soil and indoor dust which has either been walked in or which has infiltrated from outdoor air; inhalation of airborne dust; and ingestion of tank water containing metals deposited as dust on roofs.

Lead was the primary focus for the study given the long history of mining in the area and heightened community awareness regarding health impacts associated with lead. The health assessment focussed on changes in blood lead levels for the most vulnerable members of the community, being young children and pregnant women, and was informed by a soil sampling program carried out around Cobar to establish background lead levels in soil.

A separate risk assessment was completed for metals other than lead, with a particular focus on metals with the potential to increase cancer risk.

NSW Health has reviewed the Project and raised no specific concerns, instead deferring to the EPA on matters related to the air quality assessment methodology. As previously noted, the EPA raised no significant concerns about the Project or the methodology used for the air quality assessment.

Lead Risk Assessment

Modelling of the cumulative impacts of the Project on the blood lead levels of the local community predicted negligible change to the blood lead levels of pregnant women, their unborn offspring, or young children as a result of the Project.

The predictions were well below target blood lead levels set by the National Health and Medical Research Council and were consistent with the range of blood lead levels reported for Australian children in communities not affected by point sources of lead (such as areas near lead smelters).

Other Metals Risk Assessment

Exposure to metals other than lead were assessed as being well below their respective health guidelines and considered to present a very low risk harm. The assessment also concluded that there was a very low probability of additive effects between metals.

The highest estimated cancer risk across all metals of concern related to nickel, which was around 10,000 to 100,000 times less than the relevant Australian guideline for an ‘acceptable’ (or negligible) risk.

Conclusion

The Project is predicted to have a negligible impact on the blood lead levels of the most sensitive members of the community, with levels consistent with the range of blood lead levels reported for Australian children in communities not affected by point sources of lead.

Other metals are also predicted to be well below guideline levels and present a very low risk of harm to the community.

The Department is satisfied that the Project would present a negligible risk to the health of the local community. The continued implementation of existing dust mitigation measures at the site is considered an effective means of minimising health risks associated with metals in dust generated by the Project.

6.4 Other Issues

Apart from the key issues considered in detail above, there are a number of other issues that were raised in the EIS or in submissions. The Department’s consideration of these other issues is summarised in **Table 5** below.

Table 5 | Assessment of Other Issues

Issue	Findings and Recommendation	
Traffic and Rail	• The Project would increase truck movements between the New Cobar and Peak complexes along Kidman Way from 50 to 100 movements per day. • Construction of the proposed power line corridor would also generate additional vehicle movements over approximately six months, including up to 6 heavy and 10 light movements a day. Access to the proposed corridor would occur via an unsealed road located approximately 1.8 km north of the New Cobar Complex intersection on Kidman Way. • PGM's Traffic Impact Assessment concluded that: - affected intersections would continue to operate at a high level of service on all approaches; - sight distances at affected intersections meet the minimum requirements of *Guide to Traffic Generating Developments (RTA 2002)*; - there would be no reduction in traffic flow capacity between the two complexes; - minor upgrades are required to the New Cobar Complex access intersections to accommodate simultaneous heavy vehicle turning movements. - no upgrade works are necessary at the Peak Complex intersection as there is sufficient width in road shoulders to accommodate simultaneous heavy vehicle turning movements; and - no upgrade works are necessary at the construction access intersection due to the minor amount of traffic and short duration of works. • TfNSW advised that the current configurations of the construction access and Peak Complex intersections do not meet Austroads road design standards and recommended some upgrade works to accommodate Project-related traffic. Specially, TfNSW requested: - widening of the Peak Complex intersection to accommodate simultaneous heavy vehicle turning movements; - Rural Basic Left-Turn and Rural Basic Right-Turn upgrade works at the construction access intersection; - sealing of the construction access intersection and property road for a distance of 20 m. • The Department considers that these upgrade works should be undertaken to minimise safety risks for road users. • PGM proposes to mitigate traffic safety risks by implementing a Traffic Management Plan, including a driver's code of conduct, strategies to manage road fatigue and a process to coordinate traffic movements between the two complexes. PGM has also agreed to restrict material transportation during local school bus periods.	• In relation to road traffic, the Department has recommended conditions requiring PGM to: - upgrade the affected intersections to the satisfaction of the relevant roads authority prior to commencement of construction; - minimise disruption and safety risks to other road users; - prepare and implement a Traffic Management Plan, including a Driver's Code of Conduct; and - keep accurate records of heavy vehicle movements entering and exiting the site. • In relation to the non-operational rail corridor within the project area, the Department has recommended conditions requiring PGM to: - comply with a suitable ground vibration limit at the rail corridor; and - In the event that the non-operational rail corridor becomes active during the life of the development, prepare a Rail Infrastructure Management Plan in consultation with TfNSW.

Issue	Findings and Recommendation	
	• The Department considers that the road traffic impacts of the Project can be appropriately managed subject to the recommended conditions of consent. • TfNSW advised that Project could potentially impact on a non-operational rail corridor located within the mining lease boundary and recommended conditions relating to access to the non-operational rail corridor, monitoring of the corridor should it ever become active and protection of rail infrastructure, future rail operations and safety, particularly from blasting. • The Department notes that there are currently no plans for the non-operational rail corridor to become active in the foreseeable future. • The Department has reviewed the advice provided by TfNSW and, where appropriate, has recommended suitable conditions of consent to address these recommendations. • The Department considers that, should the non-operational rail corridor become active within the life of the development, potential impacts of the development on the safety and serviceability of the corridor could be appropriately managed based on the recommended conditions of consent.	
Noise	• The Project would result in the continuation of noise emissions generated at the complex for an additional 12 years. Sources of operational noise include the operation of ventilation fans, ore haulage, trucks and machinery. Noise sources would remain the same for the Project, with the exception of an approved (but not yet constructed) ventilation intake and exhaust to be installed at the Great Cobar exploration decline (see **Figure 3**). • Noise would also be generated during construction of the proposed powerline and pad-mounted substation and from road haulage of ore to the Peak Complex. PGM proposes to undertake construction activities between 6am and 6pm seven days per week, over a period of approximately six months. • A Noise and Vibration Impact Assessment included in the EIS assessed existing and potential noise levels at 44 representative receivers surrounding the site. As the Complex is located adjacent to the town of Cobar, a variety of sensitive receiver types were assessed, including residences, active and passive recreation areas, schools, a hospital, care facilities, a cultural centre, a caravan park and industrial and commercial premises. • Noise modelling predicted that there would be no exceedances of Project Noise Trigger Levels (PNTLs) at all privately-owned receivers. All receivers were predicted to experience noise levels below the minimum day, evening and night limits prescribed by the *Noise Policy for Industry 2017* (NPfI) (i.e. 40 dB day, 35 dB evening and night), during proposed operating and construction scenarios. • Maximum night-time noise levels are also predicted to be below the sleep disturbance criteria set out in the NPfI at all residential receivers.	• The Department has recommended conditions, including: – noise limits for residential receivers being the minimum limits prescribed by the NPfI; – a noise management plan, including a noise monitoring program; and – an out-of-hours works protocol for any construction works proposed to be undertake outside of the day period (i.e. 6am to 7am).

Issue	Findings and Recommendation	
	• Additional light and heavy vehicle movements associated with the Project would result in minor increases in road traffic noise of around 1 dBA at the nearest receiver on Kidman Way (R31). The Department notes that noise increases of this magnitude are generally not perceptible to the human ear and are considered acceptable under the *NSW Road Noise Policy* (RNP). • The EPA advised it had no objections to the Project and provided recommended noise conditions including contemporary noise limits, management and monitoring measures. The Department has adopted these recommendations and considers that the noise impacts of the Project can be appropriately managed under these contemporary conditions of consent.	
Blasting	• The Project would require blasting to develop underground workings. Blasting is currently regulated under the existing Council development consent and the site's EPL. Both instruments identify a ground vibration criteria for residences of 5mm/s peak particle velocity for 95% of blasts undertaken in a 12-month period. • A Noise and Vibration Impact Assessment included in the EIS identified that controlling maximum instantaneous charge (MIC) relative to the distance of sensitive receivers is a key factor in limiting ground vibration impacts. PGM has committed to continue managing blast design to achieve the residential ground vibration criteria. PGM advised that achieving the residential ground vibration criteria would ensure that relative vibration criteria for other receivers (i.e. historic heritage items and other infrastructure) would be achieved. • Objecting submissions raised concern with potential blasting impacts on residences in the vicinity of the mine and reported damage to property from existing operations. • PGM advised that no exceedances of blast impact criteria have occurred to date, however committed to continue managing grievances though a community and stakeholder engagement strategy, and extending the blast notification network. • As the proposed location of blasting would occur significantly below the surface, the Department considers that structural damage to surface infrastructure would be unlikely. Nonetheless, the Department recognises that the Great Cobar resource lies in closer proximity to the town of Cobar, albeit at depths of 150 to 800 m below ground level. • EPA raised no concerns about the Project's potential blast impacts. • The Department considers that the potential blast impacts of the Project could be appropriately mitigated through proper management, monitoring and communication processes.	• The Department has recommended contemporary blasting conditions, including: – ground vibration criteria; – a suitable system to notify the public of the blasting schedule; – monitoring of all blasts; and – the preparation of a Blast Management Plan, including a protocol for investigating and responding to blast-related complaints.
Geotechnical & Subsidence	• The Project involves the ongoing use of underground stope mining methods, which generally enable adaptive mine design and subsidence mitigation measures to be incorporated as mining progresses.	• The Department has recommended conditions including:

Issue	Findings and Recommendation	
	• Completed stopes would continue to be progressively backfilled with waste rock and in circumstances where geotechnical conditions require increased structural integrity, a mixture of waste rock and cement slurry would be used to provide additional stability. • The EIS included a subsidence assessment that predicted that surface subsidence would be negligible (i.e. less than 15 mm). It was predicted that there would be minor displacement (i.e. up to 50-60 mm) in isolated sections of the New Cobar Open Cut pit wall crests at the end of mining. However, it was concluded that there is enough separation between the pit and underground workings to not cause significant stress or instability to the pit. • These negligible subsidence predictions are largely attributed to the proposed mining methodology and footprint, strong rockmass and geological conditions, and depth of cover. • PGM proposes to mitigate subsidence and potential geotechnical risks by conducting: – ongoing stope stability assessment and evaluation of rockmass response to mining, with adjustments to the mine plan and design where required; – a review of mining conditions prior to extraction, particularly in areas of weak cover layers, fresh rock and/or oxidised zones; – ongoing review and management of areas considered to have potential for overbreak or stope failure, including the option to backfill with cemented hydraulic fill material in these areas when necessary; and – undertaking low level monitoring such as annual surveys in key locations. • The Department acknowledges that there is no record of significant subsidence or geotechnical failure issues at both the New Cobar and Peak complexes and considers that the predicted subsidence impacts would be negligible. • The Resources Regulator did not raise any concerns in relation to subsidence impacts. • The Department considers that PGM's proposed strategies are appropriate in identifying and managing potential subsidence impacts. The Department has recommended a condition requiring PGM to ensure negligible subsidence impacts are realised and maintained post-mining.	– a performance measure of negligible subsidence impacts or environmental consequences; and – long-term rehabilitation objectives for completed stopes, including safe, stable and negligible subsidence.
Aboriginal and Historic Heritage	• The EIS included an Aboriginal Cultural Heritage Assessment Report (ACHAR) which was prepared in accordance with relevant guidelines and in consultation with Registered Aboriginal Parties (RAPS). • The Project's existing and proposed underground mining areas are predicted to have negligible surface and subsidence impacts. As such, impacts to Aboriginal cultural heritage items above the mining area is considered unlikely. However, construction of the power line spur has the potential to directly impact two identified Aboriginal sites, known as the 'New Cobar Complex Background Scatter' and 'Cornish Town'.	• The Department has recommended conditions, including: – the preparation of an Aboriginal Cultural Heritage Management Plan, in consultation with RAPs and Heritage NSW; and – unexpected finds procedures.

Issue	Findings and Recommendation	
	• The New Cobar Complex Background Scatter is a low-density scatter comprising about of 36 stone artefacts, of which about 23 are located within the proposed power line corridor. The ACHAR identified the artefact scatter to be moderately to heavily disturbed and of low scientific significance. Heritage NSW noted that the artefact scatter offers an example of Aboriginal site occupation and value for local Aboriginal people. • The Cornish Town site contains the remains of an informal settlement of Aboriginal and non-Aboriginal people over the late 19th and early to mid-20th century. The site was removed in the 1960s and while little remains of the town, there is some evidence of remnant historical features such as roads, structures, and debris. Consultation with RAPs identified the site's lasting contemporary social and cultural values, and that it was the former home of an Aboriginal stakeholder. The ACHAR identified the site to have moderate scientific value. • The majority of the Cornish Town site would not be impacted by the Project, however, the proposed power line corridor would directly impact some structural remains of the former home. Despite this loss, the ACHAR concludes that the overall cultural value of the site would not experience a loss in value, as its value is predominately intangible and not specific to the physical remains. • Where possible, PGM proposes to avoid impacts to the curtilage of Cornish Town. Further, PGM has committed to undertake an archival and oral history study of the post contact shared histories associated with the Cornish Town. • Heritage NSW advised that the management strategies proposed in the EIS to reduce harm to Aboriginal cultural heritage would be adequate and proportionate. Heritage NSW noted the interconnection between Aboriginal people and non-Aboriginal residents with the remains of the Cornish Town site and agreed that an archival and oral history study of post contact shared stories should be undertaken. The Department has included a condition to this effect. • The Department considers that the Project's overall impacts on Aboriginal cultural heritage are unlikely to be significant or widespread, and could be appropriately managed by the recommended conditions of consent.	
Historic Heritage	• The Cobar region has a long-established history with European occupation and mining exploration activities dating back to the 1870s. • There are two locally listed heritage items located within the Project boundary, including: – Towser's Huts - located 200 m north of the New Cobar Open Cut pit; and – The Great Cobar Heritage Centre (Cobar Pastoral and Mining Technology Museum 1910) – located in the northwest corner of the Project boundary approximately 950 m from the nearest existing or proposed infrastructure. • A Statement of Heritage Impact included in the EIS advised no impacts to these sites are predicted so long as blast vibration is managed to meet the required criteria.	• The Department has recommended the preparation of a Historic Heritage Management Plan, in consultation with Heritage NSW, Council and relevant stakeholders.

Issue	Findings and Recommendation	
	• PGM also propose a number of management and mitigation measures including: – maintaining fencing around the Towser's Huts to restrict access and provide ongoing protection; – ongoing vibration monitoring of the Great Cobar Heritage Centre for impacts from blasting; and – remediation of any blasting related impacts to heritage items. • In its submission, Council requested that the museum be protected from risks of blasting or subsidence. PGM confirmed that it has commenced vibration monitoring and conducted a dilapidation assessment of the museum in September 2019 and committed to completing another assessment once renovations had been completed. • There are an additional 21 listed heritage items within 1 km of the Project boundary, however, none are predicted to be impacted by the Project. • Heritage NSW did not raise any significant concerns and generally agreed with PGM's recommendations for historic heritage management. • The Department considers the Project's potential impacts on historic heritage values can be appropriately managed under conditions of consent.	
Hazards	• The EIS included a Hazard Risk Assessment that was prepared in accordance with the relevant guidelines. • Potential hazards and risks associated with the Project include the storage of hazardous goods, fire, explosion and contamination (land, water and air). • The Hazard Risk Assessment considered four scenarios to determine the potential risks to public safety and the environment. No scenarios were considered to have a greater than moderate consequence. • PGM advised that the Project would not significantly change the identified hazards and risks of the existing mine, which would be managed in accordance with existing management plans, Australian Standards and the *Rural Fires Act 1997*. • PGM proposes to mitigate specific aspects of the Project through, appropriate design, storage and maintenance of fuel and the diesel generator, appropriate handling of combustible substances and maintenance of the proposed powerline corridor to minimise bushfire risk. • The Department's Hazards team raised no concerns with the Project. NSW Rural Fire Service recommended that PGM prepare and implement a Fire Safety Study that details fire prevention and mitigation measures for the site. • The Department considers that the Project would not increase risks to public safety and would not alter the consequences or likelihood of a hazardous event on the site or during materials transport. As such, the Department considers that the Project is consistent with the provisions of SEPP 33.	• The Department has recommended a condition requiring PGM to: – prepare a Fire Safety Study; and – to operate the Project in accordance with *Planning for Bushfire Protection Guideline 2019*.

Issue	Findings and Recommendation	
Waste Management	• Waste rock is the primary waste stream generated by the Project and management of PAF waste rock is outlined in detail in Section 6.1 above. • The Project would not introduce any new waste streams to the mine, and all existing waste would continue to be classified and managed in accordance with relevant waste management guidelines. • The Department is satisfied that waste from the Project could continue to be handled and disposed of in accordance with the existing on-site waste management system and current guidelines.	• The Department has recommended conditions requiring PGM to minimise waste, and classify and dispose of all waste in accordance with EPA guidelines.
Rehabilitation	• The site is subject to mining lease conditions relating to mine closure and rehabilitation management. PGM advise that existing rehabilitation objectives would extend to new mining and infrastructure domains. • The New Cobar Open Cut would remain as the only final void. PGM also proposes to retain key water bodies, including Spain's Dam and the Young Australia Dams. • The Resources Regulator identified the need to encapsulate PAF material in the waste rock emplacement area. PGM proposes to undertake a geochemical investigation of the waste rock emplacement to better understand the extent of PAF material within the landform and to inform erosion and landform evolution modelling for the landform. PGM committed to implementing geomorphic principles in the design of the final waste rock landform, where practical. • The Department notes that rehabilitation of the complex will continue to be regulated under the relative mining authorisation. The Department considers that appropriate rehabilitation outcomes can be achieved for the Project and accepts that detailed information on rehabilitation strategies can be prepared post-determination.	• The Department has recommended conditions requiring comprehensive rehabilitation objectives, the preparation of a Rehabilitation Strategy in consultation with key agencies, and a Rehabilitation Management Plan, in accordance with the mining lease(s).
Visual	• The visual landscape of the Project area is largely affected by existing and historic mining activities. Notably, the Fort Bourke Hill viewing platform is located on the eastern edge of the New Cobar Open Cut pit, which is a tourist attraction promoting mining history in Cobar. Existing Council consent conditions require this public viewing platform to be maintained for tourism purposes. • The key visual impact associated with the Project is the proposed emergency egress winder, which would have a height of about 14 m. The winder would potentially be visible from up to 5 km away, however it would be largely indistinguishable at distances beyond 2 km and would generally blend in with the surrounding mining landscape. The EIS concluded that visual impacts from the winder would not be considered significant. • The existing waste rock emplacement is another key visual feature in the landscape, however this landform is already approved and would not change as a result of the Project.	• The Department has recommended conditions requiring: – visual and off-site lighting impacts to be minimised; – external lighting to be compliant with relevant Australian standards; and – the Fort Bourke Hill viewing platform to be maintained for safe public access for the life of the development.

Issue	Findings and Recommendation	
	• Existing lighting arrangements at the complex are not directly visible from the town would not change as a result of the Project. Motion sensitive lighting will be required at the winder, however this would only be used during night-time emergency situations or maintenance. • Overall, the Department considers that the visual impacts associated with the Project are minor and would not significantly impact the visual character of the surrounding area.	
Greenhouse Gas	• The Project would generate around 8,744 t $CO_{2\text{-}e}$/year of Scope 1 greenhouse gas (GHG) emissions and around 60,616 t CO_2^{-e}/year of Scope 2 GHG emissions, which represent approximately 0.058% of total GHG emissions for NSW. • PGM is required to calculate and report scope 1 and 2 GHG emissions annually under the National Greenhouse and Energy Reporting (NGER) scheme, in accordance with the requirements of the NGER Act 2007. • The Department has recommended conditions requiring PGM to prepare an Air Quality and Greenhouse Gas Management Plan that requires implementation of best practice management to mining GHG emissions and improve energy efficiency.	• The Department has recommended the preparation of an Air Quality and Greenhouse Gas Management Plan in consultation with EPA, NSW Health of the CCC.
Biodiversity	• The Project's surface infrastructure components would be constructed in areas of cleared land and underground mining impacts are not predicted to affect native vegetation, groundwater dependent ecosystems or terrestrial plant communities. • On 29 October 2020, a BDAR waiver was granted for the Project as it was determined that it is not likely to have any significant impact on biodiversity values. • BCS reviewed the EIS and advised that it has no additional comments.	• No conditions necessary
Social	• The EIS included a Social Impact Assessment (SIA) that found the proposal would likely result in a number of social impacts on local communities. • Positive social impacts would be associated with continuity of employment and economic stimulus in the region. • Key negative social impacts would be associated with potential amenity impacts including noise, air quality and blasting, as well as groundwater drawdown of the Cobar Rugby Club secondary field irrigation bore. • Additionally, concerns were raised in initial consultation about diminishing social cohesion in the community as a result of the fly-in-fly-out (FIFO) and drive-in-drive-out (DIDO) workforce. • PGM acknowledged that the Project would largely retain the existing workforce, which involves a combination of local residents and FIFO/DIDO workers. PGM propose to mitigate these concerns through	• The Department has recommended a condition requiring PGM to: – continue operation of its Community Consultative Committee for the life of the project; – enter into to the proposed VPA with Council within six months of the commencement of development; – prepare a community and stakeholder engagement plan, in consultation with Council.

Issue	Findings and Recommendation	
	encouragement for workers to reside locally, offering training and upskilling opportunities, and procuring local goods and services wherever possible. • Council recommended that PGM develop a community and stakeholder engagement plan that includes these commitments. • PGM has also agreed to enter into a Voluntary Planning Agreement (VPA) with Council which includes contributions of around $3 million over the life of the project for community enhancement measures, including projects to attract and retain people within the LGA. • The Department recognises that the social impacts of the project would remain similar to the existing setting and considers that these impacts can be suitably managed under the recommended conditions of consent. The Department considers that effective implementation of the proposed mitigation measures would contribute to community enhancement and social cohesion.	
Economic	• The Project would provide a range of economic benefits, including: – the continuation of 404 FTE operational jobs and an additional 10 FTE jobs across both complexes; – up to 272 FTE operational jobs at the New Cobar Complex during peak production; – 141 FTE construction jobs; – approximately $148 M of direct and flow on expenditure across NSW, including approximately 75% in regional areas surrounding the Project. – approximately $59.7 M in royalties and payroll tax to NSW; • A cost benefit analysis included in the EIS identified that the economic benefits of the Project would outweigh the costs, with an estimated Net Present Value of $281.4 M (7% discount rate). • PGM advised that more than half of the existing workforce across both complexes resides in Cobar and that workers are encouraged to reside locally where possible. • The Department accepts that the Project would provide continuity of a significant number of direct and indirect jobs, and that a significant percentage of the workers would reside in the local area. Further, the Department expects that a large proportion of workers' salaries would be reinvested and circulated within the region. • The Department agrees with MEG that the Project would be an efficient development and utilisation of minerals resources which would foster significant economic benefits local and regional areas, and to NSW.	• No conditions necessary

7 Evaluation

PGM is seeking approval of the Project to allow for ongoing mineral extraction from the New Cobar Complex. The Department has assessed the Project in accordance with the requirements of the EP&A Act and EP&A Regulation, including relevant EPIs, public submissions and agency advice.

The key issues of the Project are associated with potential impacts associated with groundwater drawdown, management of PAF waste rock, dust emissions and heavy metals exposure.

hile the Project would be unlikely to significantly impact the regional groundwater table or groundwater quality in the vicinity of the site, there would be localised impacts to the groundwater table, during mining and post-mining. This includes drawdown of up to 17.5 m at a backup irrigation bore for the Cobar Rugby Club. PGM has proposed to implement 'make-good' arrangements to compensate water losses attributed to the Project, including for example providing a deeper bore to ensure alternative water supply is available.

The extraction and exposure of PAF waste rock has the potential to result in acidic mine drainage. This is an existing risk managed by both the New Cobar and Peak complexes and would be present during operations and post-mining. PGM has advised that it would continue to implement a range of management measures to avoid adverse impacts, including screening and handling procedures, appropriate waste rock emplacement design and erosion and sediment controls.

The Project would result in marginal increases in air emissions, primarily related to the Great Cobar ventilation outlet and additional haulage trucks operating between the New Cobar and Peak complexes and on-site. Exposure of the local community to metals in dust generated by the Project was assessed as presenting a very low risk of harm to human health, with exposure levels predicted to be well below health guidelines. PGM has proposed to continue implementing best practise dust mitigation measures, which primarily include watering of exposed surfaces and areas of activity.

The Project would also have other minor environmental and social impacts, related to traffic level increases, amenity (blasting, noise and visual), heritage, hazards and rehabilitation.

However, the Department recognises that the Project would optimise the recovery of mineral resources from an existing mine and would primarily utilise existing mining infrastructure and surface facilities. As such, there would be minimal additional surface disturbance and no additional impact on biodiversity values. The proposed use of underground stope mining methods would facilitate the safe and efficient extraction of a State significant resource with negligible subsidence impacts.

The Project is located in a long-established mining area and would support ongoing and additional employment for around 414 workers across the New Cobar and Peak Mine complexes for an additional 12 years. The Project would result in economic benefits to the surrounding regional area and to NSW of up $59.7 M in royalties and $145 M in direct and flow on expenditure.

Overall, the Department considers that the Project would facilitate the extraction of an important mineral resource and represents a logical extension of an existing mining operation. The Project is consistent with NSW strategic policies for minerals, metals and the Far West Region.

The consolidation of local development consents would modernise the environmental conditions relevant to the complex, and provide a more consistent approach to the regulation of the site.

The Department recognises that the Project would result in a range of incremental environmental impacts as well as the prolonging of existing impacts associated with the current operation. However, these impacts would occur in an existing brownfield mining setting and would have minimal impacts on sensitive receivers.

The Department considers that the predicted and potential environmental and social impacts of the Project could be appropriately managed and mitigated under recommended conditions of consent. In particular, the Department has recommended comprehensive measures to manage and monitor surface and groundwater impacts (including compensatory water supply), waste rock handling and emplacement, dust emissions, blast vibration, noise, traffic and heritage.

On this basis, the Department considers that the Project's benefits significantly outweigh its costs, is in the public interest and is approvable, subject to strict conditions of consent.

8 Recommendation

It is recommended that the Director Resource Assessments, as delegate of the Minister for Planning:

- **considers** the findings and recommendations of this report;
- **accepts and adopts** all of the findings and recommendations in this report as the reasons for making the decision to grant consent to the application;
- **grants consent** for the State significant development application for New Cobar Complex Project (SSD 10419), subject to the conditions in the attached development consent (see **Appendix H**)
- **signs** the attached development consent and recommended conditions of consent (see **Appendix H**).

Recommended by:

Philip Nevill
Senior Environmental Assessment Officer
Energy, Resources and Industry

Recommended by:

Gabrielle Allan
Team Leader
Energy, Resources and Industry

9 Determination

The recommendation is **Adopted / Not adopted** by:

Steve O'Donoghue
Director Resource Assessments
as delegate of the Minister for Planning

Appendices

Appendix A – Environmental Impact Statement

Refer to 'EIS' folder on the Department's website at: New Cobar Complex Project | Major Projects - Department of Planning and Environment

Appendix B – Public Submissions

Refer to 'Submissions' folder on the Department's website at: New Cobar Complex Project | Major Projects - Department of Planning and Environment

Appendix C – Submissions Report

Refer to 'Response to Submissions' folder on the Department's website at: New Cobar Complex Project | Major Projects - Department of Planning and Environment

Appendix D – Amended Development Application

Refer to 'Amendments' folder on the Department's website at: New Cobar Complex Project | Major Projects - Department of Planning and Environment

Appendix E – Agency Advice

Refer to 'Agency Advice' folder on the Department's website at: New Cobar Complex Project | Major Projects - Department of Planning and Environment

Agency	Advice
Department of Planning and Environment	
Biodiversity Conservation and Science Directorate (BCS)	• BCS – Advice on EIS
Water Group (DPE – Water)	• DPE Water – Advice on EIS • DPE Water – Advice on Submissions Report
Crown Lands	• Crown Lands – Advice on EIS • Crown Lands – Advice on Submissions Report
Heritage NSW	• Heritage NSW (Aboriginal Cultural Heritage) – Advice on EIS • Heritage NSW (Historic Heritage) – Advice on EIS
Environment Protection Authority	• EPA – Advice on EIS • EPA – Advice on Submissions Report
Department of Regional NSW	
Mining, Exploration and Geoscience	• MEG – Advice on EIS • MEG – Advice on EIS (Resource & Economic Assessment) • MEG – Advice on Submissions Report

Agency	Advice
NSW Resources Regulator	• Resources Regulator – Advice on EIS • Resources Regulator – Advice on Submissions Report
Department of Primary Industries	
NSW Agriculture	• DPI Agriculture – Advice on EIS
Transport for NSW	• TfNSW – Advice on EIS • TfNSW – Advice on Submissions Report
NSW Rural Fire Service	• RFS – Advice on EIS
Subsidence Advisory NSW	• SA NSW – Advice on EIS
NSW Health	• NSW Health – Advice on EIS
Cobar Shire Council	• Cobar Shire Council – Advice on EIS • Cobar Shire Council – Advice on Submissions Report

Appendix F – Additional information

Refer to 'Additional Information' folder on the Department's website at: New Cobar Complex Project | Major Projects - Department of Planning and Environment

Subject Matter	Date
RFI 1 – Consolidation of Existing Consents and Voluntary Planning Agreement	20 August 2021
Response to RFI 1 – Consolidated Consents	29 September 2021
Response to RFI 1 – Voluntary Planning Agreement	29 November 2021
RFI 2 – Agency Advice	18 October 2021
Response to RFI 2 – Agency Advice	18 November 2021

Appendix G – Statutory Considerations

The Department's assessment of the Project has given consideration to all applicable statutory requirements (see **Section 4**). These include:

- the objects found in Section 1.3 of the EP&A Act; and
- the matters listed under Section 4.15(1) of the EP&A Act, including applicable environmental planning instruments and regulations.

Some of the key statutory requirements are addressed in further detail below.

G.1 Objects of the EP&A Act

A summary of the Department's assessment against the current relevant objects (found in section 1.3 of the EP&A Act) are provided in **Table G1**.

Table G1 | Consideration of the Project against relevant objects of the EP&A Act

Objects of the EP&A Act		Consideration
(a)	*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*;	The Project meets this object because it would: • optimise recovery of mineral resources from an existing mine, primarily utilising existing surface facilities and infrastructure and have minimal surface disturbance; • represent continuation of a long-standing historical land use; • provide substantial royalties to the State; and • provide substantial ongoing employment and economic benefits to the State and region. The Department considers that residual environmental and social impacts of the Project could be appropriately managed under recommended conditions.
(b)	*to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment*;	The Department's assessment has sought to integrate all significant environmental, social and economic considerations. The Department considers that the Project can be carried out in a manner that is consistent with the principles of ecologically sustainable development.
(c)	*to promote the orderly and economic use and development of land*;	The Project represents a continuation of a long-standing historical land use. The Project would optimise the recovery of mineral resources from an existing mine and would primarily utilise existing mining infrastructure and surface facilities. The Department considers this represents an orderly and economic use of the land.
(e)	*to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats*;	The Project's surface infrastructure components would be constructed in areas of cleared land and underground mining impacts are not predicted to affect native vegetation, groundwater dependent ecosystems or terrestrial plant communities. A BDAR waiver has been granted for the Project as it was determined that it is unlikely to result in any significant impacts on biodiversity values.
(f)	*to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)*;	The Department has assessed the likely impacts of the Project on Aboriginal cultural heritage and historic heritage. The Department recognises that the Project has the potential to impact some Aboriginal and historic heritage sites, however, considers that these impacts can be appropriately managed and mitigated under recommended conditions of consent.
(i)	*to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State; and*	The Department notified and consulted with Cobar Shire Council and other NSW government agencies. The Department has considered the issues raised by these agencies in its assessment (refer to **Section 5** and **6**).
(j)	*to provide increased opportunity for community participation in environmental planning and assessment*.	The Department publicly exhibited the Project and considered all submissions in its assessment (refer to **Section 5** and **6**).

G.2 Ecological Sustainable Development (ESD)

The EP&A Act adopts the definition of ESD found in the *Protection of the Environment Administration Act 1991*, as follows:

> *"ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:*
> *(a) the precautionary principle;*
>
> *(b) inter-generational equity;*

(c) conservation of biological diversity and ecological integrity; and

(d) improved valuation, pricing and incentive mechanisms."

The Department has considered ESD and its related principles and programs as follows:

Precautionary Principle

The ESD precautionary principle requires that: *"if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation"*.

The Department has assessed the Project's threat of irreversible environmental damage and considers that there is sufficient scientific certainty to enable the determination of the application. The Department has considered all the available information presented and consulted closely with key Government agencies to obtain advice on various aspects of the proposal.

While it is acknowledged that the Project would result in a number of environmental impacts of varying significance, the key matters that could result in serious or irreversible damage relate to unmitigated impacts on water resources.

The EIS, Submissions Report and Department's assessment has identified management and mitigation measures to address potential environmental impacts, and includes commitments and requirements to implement monitoring, auditing and reporting mechanisms.

Overall, the Department has assessed these potential impacts in detail (see **Section 6**) and considers that the recommended risk-based conditions and performance measures would provide appropriate protection for the environment and minimise the potential for any serious or irreversible environmental damage.

Intergenerational equity

The ESD principle of intergenerational equity requires that: "*the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations*".

The Department considers that the Project does not conflict with the principle of intergenerational equity.

Intergenerational equity has been addressed through maximising efficiency and mineral resource recovery and developing environmental management measures which are aimed at ensuring the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

The recommended performance measures and other conditions of consent would provide an appropriate degree of protection for the health, diversity and productivity of the environment and not constrain the ability of future generations to use or enjoy the Project area in a similar way as in the present and recent past.

The Department acknowledges that emissions generated from mining operations are a contributor to climate change, which has the potential to impact future generations. However, the Department also recognises that there is a clear and increasing need to develop such mineral deposits, with copper recognised as a critical mineral for a range of future industries including renewables, recycling and waste management, advanced manufacturing and aerospace. PGM will be required to review and implement best practice greenhouse gas emissions reduction and energy efficiency measures and detail these measures in an Air Quality and Greenhouse Gas Management Plan.

The Department's assessment of direct energy use and associated greenhouse gas emissions (i.e. Scope 1 and Scope 2 emissions) has found that these emissions would be low and comprise a very small contribution towards climate change at both the national and global scale (see **Section 6.4**).

The Department considers that the Project's socio-economic and positive downstream benefits generated by the production of mineral resources would benefit future generations in the short to medium term, particularly through the provision of gold as a rare and valuable commodity and copper for its use in low-carbon technologies.

Conservation of Biological Diversity and Ecological Integrity

The ESD principle of conservation of biological diversity and ecological integrity requires that: "*conservation of biological diversity and ecological integrity should be a fundamental consideration*" in decision making processes, such as the development consent process and the environmental impact assessment process which supports it.

The Project's potential impacts on biodiversity have been outlined in the Department's assessment of the Project (**Section 6.4**). The Department considers that the conservation of biological diversity and ecological integrity has been applied through avoiding and minimising biodiversity impacts. A BDAR waiver has been granted for the Project as it was determined that it is not likely to have any significant impact on biodiversity values

Improved Valuation, Pricing and Incentive Mechanisms

The ESD principle of improved valuation, pricing and incentive mechanisms requires that: "*environmental factors should be included in the valuation of assets and services*" in decision making processes, including by such means as the 'polluter pays' principle, full life cycle costing and cost-effective pursuit of environmental goals.

Valuation and pricing of resource has been considered through economic, social and cost-benefit analyses which have been completed as part of the EIS. The cost benefit analyses sought to weigh up the Project's costs and benefits based on its full range of environmental, social and economic impacts. The Department has carefully considered the costs and economic benefits of the proposal and support the conclusion that it would deliver a significant net benefit to the local region and NSW (see **Section 6.4**).

G.3 Environmental Planning Instruments

Since lodgement of the development application, a large number of the NSW State Environmental Planning Policies (SEPPs) have been consolidated into 11 policies. The consolidated SEPPs commenced on 1 March 2022, with the exception of *State Environmental Planning Policy (Housing) 2021*, which commenced on 26 November 2021.

The SEPP consolidation does not change the legal effect of the repealed SEPPs, as the provisions of these SEPPs have simply been transferred into the new SEPPs. Further, any reference to an old SEPP is taken to mean the same as the new SEPP. For consistency, the Department has considered the Project against the relevant provisions of the SEPPs that were in force when the development application was lodged.

Under Section 4.15 of the EP&A Act, the consent authority is required to consider, amongst other things, the provisions of the relevant EPI's, including any exhibited draft EPI[1].

[1] Note that due to the effect of clause 11 of the SRD SEPP, development control plans do not apply to SSD.

SEPP (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP)

Permissibility

Clause 7(1)(a) of the Mining SEPP identifies that underground mining is permissible with consent on any land. Clause 7(1)(d) provides that 'facilities for the processing or transportation of minerals or mineral bearing ores' are permissible with consent on land 'on which mining may be carried out (with or without development consent), but only if they were mined from that land or adjoining land'. Consequently, the proposed development is permissible with consent under the Mining SEPP.

Matters for Consideration

Part 3 of the Mining SEPP lists a number of matters that a consent authority must consider before determining an application for consent for development for the purposes of mining. These matters were considered in PGM's EIS (see Section 4.4.1 of the EIS). The Department has considered these matters in its assessment of the Project and has included a brief outline of the key considerations below.

Non-discretionary development standards (clause 12AB)

Clause 12AB identifies non-discretionary development standards for the purposes of section 4.15(2) of the EP&A Act in relation to the carrying out of development for the purposes of mining. The Department has considered the cumulative noise, cumulative air quality, air blast overpressure, ground vibration and aquifer interference associated with the Project. The Department is satisfied that:

- the cumulative noise and air emissions associated with the Project have been appropriately assessed and are predicted to comply with relevant noise and air quality standards;
- ground vibration levels are predicted to comply with relevant criteria with the application of appropriate blast design;
- groundwater impacts of the Project have been assessed against the *Aquifer Interference Policy.* Drawdown impacts exceeding the policy's minimal impact requirement of 2 m cumulative decline at a water supply work are predicted for a bore at the Cobar Rugby Club. The Department is satisfied that this impact can be managed with the implementation of appropriate compensatory measures.

Compatibility with other land uses (clause 12)

The Department's assessment has considered the potential impacts of the Project on other land uses in the area, including land use for residential, industrial, agricultural, heritage and tourism purposes. The Department has considered the potential noise, air quality, blast and visual impacts at nearby receivers, as well as the potential impacts on the communities dependent on the water catchment. This consideration has been undertaken in consideration of the public benefits of the Project and measures to avoid, mitigate and minimise any land use incompatibility.

Overall, the Department considers that, subject to appropriate conditions, the Project could be managed to minimise any potential land use conflicts and meet the aims, objectives and provisions of clause 12.

Voluntary Land Acquisition and Mitigation Policy (clause 12A)

The Department's assessment has considered the NSW Government's *Voluntary Land Acquisition and Mitigation Policy*. The Project is not predicted to result in exceedances of relevant noise and air quality impact assessment criteria and would not trigger the voluntary mitigation or acquisition rights established under the policy.

Compatibility of proposed development with mining, petroleum production or extractive industry (Clause 13)

The Department considers that the Project would optimise resource recovery from an existing mine and represents a logical use of existing mine infrastructure surface facilities site. The Department considers that the Project has been designed to be long term stable and that it is compatible with, and would not adversely affect, adjacent or future mining-related activities.

Natural Resource Management and Environmental Management (clause 14)

Clause 14(1) requires that, 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 that impacts on water resources, threatened species and biodiversity are avoided or minimised to the greatest extent practicable and that greenhouse gas emissions are minimised to the greatest extent practicable. Potential impacts are comprehensively addressed in the Department's assessment of these matters in **Section 6**.

The Department has recommended a detailed suite of conditions to ensure that Project is undertaken in an environmentally responsible manner, including but not limited to, new conditions in relation to water resources and management of greenhouse gas emissions.

Resource Recovery (clause 15)

The Department has considered the efficiency of the Project with respect to resource recovery, in consultation with MEG and RR. The Department considers that the Project can be carried out in an efficient manner that optimises resource recovery while giving appropriate recognition and protection for the environmental values that may be affected.

Transport (clause 16)

While the framing of clause 16 is quite broad, its particular purpose is to limit the transport of coal, other minerals and their ores, and extractive materials on public roads. The Project would result in the continued transport of extracted ore by road to the Peak Complex for processing. Whilst processing rates at the Peak Complex would remain unchanged, the Project would facilitate increased haulage of ore to the Peak Complex along Kidman Way to provide greater flexibility for operation at both the Peak and New Cobar complexes.

The Department notes that alternative options to road haulage were considered by PGM, including the use of conveyors or subsurface transportation, however it was concluded that these options would result in greater biodiversity and water impacts, and waste rock generation. PGM also considered these options financially unfeasible. The Department agrees that these alternatives would pose greater impacts than those of the proposed Project.

The Department has consulted with the applicable road authorities in relation to the Project and has taken these submissions into consideration in its assessment (see **Section 6.4**). The Department has also recommended a range of conditions to limit traffic impacts from the Project.

Rehabilitation (clause 17)

Clause 17 outlines particular requirements relating to consideration of whether any consent granted should be subject to conditions aimed at ensuring rehabilitation of land disturbed by mining and, in particular, whether conditions should require preparation of a rehabilitation management plan, appropriate treatment of waste, remediation of soil contamination and the avoidance of public safety risks.

The Department has recommended strict conditions to ensure the Project site is rehabilitated in a timely and integrated manner and that the final landforms are made safe, stable and non-polluting.

Summary of Mining SEPP

Based on its assessment of the development, the Department considers that the Project and can be managed in a manner that is generally consistent with the aims, objectives and provisions of the Mining SEPP.

SEPP (State and Regional Development) 2011 (SRD SEPP)

The Project is declared to be State Significant Development (SSD) under section 4.36 of the EP&A Act, as it is development for the purpose of mining with a capital investment value of more than $30 million, which is specified in clause 5 of Schedule 1 to SRD SEPP.

SEPP (Infrastructure) 2007 (Infrastructure SEPP)

The Infrastructure SEPP requires the consent authority to notify relevant public authorities about development that may affect public infrastructure or land, including electricity transmission and distribution networks, gas pipeline corridors, railways and rail corridors.

The Department notified all relevant public authorities including Cobar Shire Council, TfNSW and Crown Lands.

The Department has consulted with public authorities and considered the matters raised in its assessment of the Project (see **Section 5**). Where appropriate, the Department has also developed conditions of consent to address the recommendations and advice of these public authorities. The Department considers that such conditions would provide appropriate protection for public infrastructure. As such, the Department considers that the requirements of the Infrastructure SEPP have been satisfied.

SEPP No. 33 – Hazardous and Offensive Development (SEPP 33)

The key aims of SEPP 33 are to ensure that, in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impacts and that any measures proposed to be employed to reduce the impact of the development are taken into account.

Clause 12 of SEPP 33 requires persons proposing to carry out development for the purposes of potentially hazardous industry to prepare a Preliminary Hazard Analysis (PHA) and to submit this with the development application. The EIS has considered the potential hazards and risks associated with the Project, including the storage of hazardous goods, potential for fire and/or explosion and contamination of land, water and air (see Chapter 18 of the EIS).

The Department has considered PGM's assessment of these matters and commitments to maintain existing controls and mitigation measures and if necessary, updating the mine's current management plans.

The Department considers that suitable mitigation measures could be incorporated into the design of the Project to ensure that it would meet relevant standards and be compatible with the existing or likely future use of land surrounding the mine. With the proposed measures in place, the Department considers that the potential hazards associated with the Project can be managed.

The Department considers that the Project would not increase risks to public safety and would not alter the consequences or likelihood of a hazardous event on the site or during materials transport. As such, the Department considers that the Project is consistent with the provisions of SEPP 33.

SEPP No. 55 – Remediation of Land (SEPP 55)

SEPP 55 requires a consent authority to consider potential land contamination when determining development applications. PGM has considered potential land contamination in its EIS, and no

evidence of significant or widespread contamination has been observed within the Project area. The Department considers that the Project area does not have a significant risk of existing contamination and that the land is suitable for the proposed use from a contamination perspective. The Project is therefore considered generally consistent with the aims, objectives, and provisions of SEPP 55.

Appendix H – Recommended Instrument of Consent

Refer to 'Recommendation' folder on the Department's website at: New Cobar Complex Project | Major Projects - Department of Planning and Environment