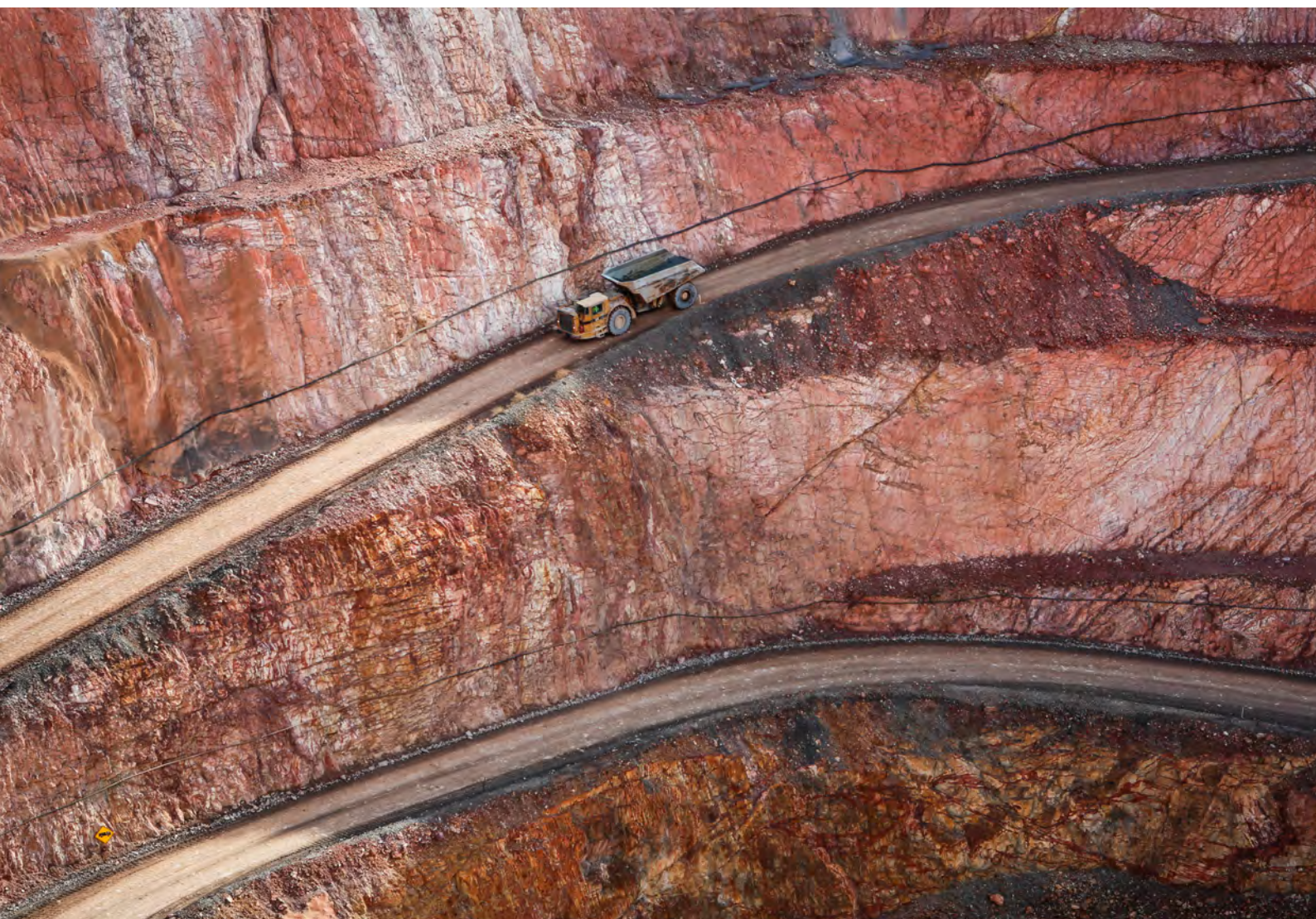




New Cobar Complex Project, State Significant Development (SSD10419) Environmental Impact Assessment

Prepared for Peak Gold Mines
February 2021





Part E References, abbreviations and acronyms



26 References

Reference

AIWH (Australian Institute of Health and Welfare) 2020, *Australian Institute of Health and Welfare*, viewed 31/7/2020: <https://www.aihw.gov.au/reports-data/population-groups/rural-remote-australians/overview>.

Australian and New Zealand Environment Council 1990, *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration*.

ANZECC & ARMCANZ 2000, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Environment Conservation Council and Agriculture and Resource Management Council of Australian and New Zealand.

ANZG 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Canberra: Australian and New Zealand Governments and Australian state and territory governments.

ARIA (Accessibility/Remoteness Index for Australia) 2020, viewed December 2020 <https://www.adelaide.edu.au/hugo-centre/services/aria#aria-methodology>

Australian and New Zealand Minerals and Energy Council (ANZMEC) and Minerals Council of Australia (MCA), 2000, *The Strategic Framework for Mine Closure*.

Australian Government, 2013, *Guidelines for groundwater quality protection in Australia: National Water Quality Management Strategy*. Canberra: Department of Agriculture and Water Resources.

Australia ICOMOS, 2013, *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter).

Austroroads, 2017, *Guide to Road Design Part 4A: Unsignalised & Signalised Intersections*.

Barnett, B., Townley, L. R., Post, V., Evans, R. E., Hunt, R. J., Peeters, L., . . . Boronkay, A, 2012, *Australian groundwater modelling guidelines*. Canberra: National Water Commission.

Beck DA, Lilley CR, Reusch F, Levkovitch V & Flatten A, 2013, A preliminary, calibrated scheme for estimating rock mass properties for non-linear, discontinuum models. *Rock Characterisation, Modelling & Engineering Design Methods – 3rd ISRM SINOROCK Symposium*, Eds. Xia-Ting Feng, John A. Hudson & Fei Tan, Shanghai, China, 18–20 June 2013.

Bennett, K 1883, Notes on the method of obtaining water from eucalyptus roots as practised by the natives of the country between the Lachlan arid Darling Rivers, *Proceedings of the Linnean Society of NSW* 8(2):213-15.

Boughen, H 1986, Towser's Huts, Cobar, New South Wales: Historic Ruin or Ruined History? *Australian Journal of Historical Archaeology*, 4, pp.67-77.

Burgess, N 2006, (revised) *The Great Cobar*, The Great Cobar Heritage Centre, Cobar.

Clelland, W 1984, *Cobar, founding fathers: an illustrated history of the pioneering days in the copper mining district of Cobar, NSW*. Macquarie Publications, Dubbo.

CBH 2020, *TEOM PM₁₀ data collated from publicly available monthly monitoring reports*, viewed August 2020 <https://www.cbhresources.com.au/operations/rasp-mine/sustainability/environment/environmental-monitoring/>

Cobar Shire Council 2000, *Designated Development Approval 99/00:022 – Open Cut Gold Mine, Cobar* 30 July 2000.

Cobar Shire Council 2020, *Mines*, viewed 17 August 2020 <https://www.cobar.nsw.gov.au/community-services/mines>.

Commonwealth of Australia 2006a, *Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry*.

Commonwealth of Australia 2006b, *Mine Rehabilitation – Leading Practice Sustainable Development*.

Cunningham, G.M, 1973, Aboriginal waterholes in the Cobar area, in *Australian Natural History*, Vol. 17, No. 11, pp. 365-369.

Department of Environment and Conservation, 2007, *Guidelines for the Assessment and Management of Groundwater Contamination*.

DECC 2008, *Managing Urban Stormwater: Soils and Construction – Volume 2E – mines and quarries*, Department of Environment and Climate Change NSW.

Reference

DECC 2009, *Interim Construction Noise Guideline*, Department of Environment and Climate Change NSW.

DECCW 2006, *NSW Water Quality and River Flow Objectives*, Department of Environment, Climate Change and Water, viewed May 2020, <https://www.environment.nsw.gov.au/ieo/index.htm>

DECCW 2010a, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*.

DECCW 2010b, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.

DECCW. (2011) *Road Noise Policy*.

Department of the Environment 2013, *Matters of National Environmental Significance Significant Impact Guidelines 1.1*.

DFAT 2020, *Australia's Trade by State and Territory, 2018-19*. Department of Foreign Affairs and Trade, Canberra.

DLWC 1997, *The NSW State Groundwater Policy Framework Document*. NSW Department of Land & Water Conservation.

DLWC 1998, *The NSW Groundwater Quality Protection Policy, A Component Policy of the NSW State Groundwater Policy*. NSW Department of Land & Water Conservation.

DLWC 2002, *The NSW State Groundwater Dependent Ecosystems Policy, A Component Policy of the NSW State Groundwater Policy Framework Document*. NSW Department of Land & Water Conservation.

DoP 2011, *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* NSW Department of Planning, January 2011.

DPE 2015, *Guidelines for Economic Assessment of Mining and Coal Seam Gas Proposals*.

DPE 2017, *Community and stakeholder engagement: Draft Environmental Impact Assessment Guidance Series June 2017*, Department of Planning and Environment.

DPI 2007, Cobar's Mining History, *Prime Facts* Vol. 555.

DPI 2012, *NSW Aquifer Interference Policy*. NSW Department of Primary Industries.

DPIE 2016, *Cobar Penneplain - Regional History*, viewed 20 August 2020
<https://www.environment.nsw.gov.au/bioregions/CobarPenneplain-RegionalHistory.htm>

DPIE 2017, *Social impact assessment guideline: For State significant mining, petroleum production and extractive industry development*, Department of Planning Industry and Environment.

DPIE 2018a, *Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments*.

DPIE 2018b, *Spatial Layer of HEVAE Vegetation Groundwater Dependent Ecosystems Value in NSW*. State Government of NSW and Department of Planning, Industry and Environment.

DPIE 2019, *Community Consultative Committee Guidelines: State Significant Projects*. Department of Planning, Industry and Environment January 2019.

Donaldson, T. 1980, *Ngiyambaa, the Language of the Wangaaybuwan*. Cambridge University Press, Cambridge.

DRE 2016, *Guideline for mineral exploration drilling; drilling and integrity of petroleum exploration and production wells*, NSW Department of Industry, Skills and Regional Development - Division of Resources and Energy, March 2016.

DRM 2020, *Royalty Revenues NSW Division of Resources and Mining*, website accessed on 10 December 2020 at <https://www.resourcesandgeoscience.nsw.gov.au/miners-and-explorers/enforcement/royalties>

DTI 2013, *ESG3 Mining Operations Plan (MOP) Guidelines*, NSW Department of Trade and Investment – Division of Resources and Energy, September 2013.

Dunn, M 2020, *The Convict Valley. The bloody struggles on Australia's early frontier*. Sydney, Allen and Unwin.

enHealth 2012a, *Environmental health risk assessment guidelines for assessing human health risks from environmental hazards*. Commissioned by the enHealth Council.

enHealth 2012b, *Australian Exposure Factors Guide*. enHealth Council.

Reference

enHealth 2018, *The health effects of environmental noise*, Department of Health

Eco Logical Australia 2020. *Great Cobar Exploration Project - flora and fauna assessment*. Prepared by Eco Logical Australia on behalf of Aurelia Metals Ltd, March 2020.

EPA 2000, *NSW Industrial Noise Policy*.

EPA 2004, *Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales*. Department of Environment and Conservation.

EPA 2014a, *Waste and Resource Recovery Strategy 2014-21*.

EPA 2014b, *Waste Classification Guidelines – Part 1: Classification of waste*.

EPA 2016, *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*.

EPA 2017, *Noise Policy for Industry*.

ESI 2017, *Groundwater Vistas version 7.24 build 244*.

GLVIA 2013, *Guidelines for Landscape and Visual Impact Assessment (GLVIA) Third Edition (2013)* prepared by the Landscape Institute and Institute of Environmental Management and Assessment.

HealthStats NSW 2019, *NSW Government*, viewed on 31 July 2020 <http://www.healthstats.nsw.gov.au/>.

Heritage Branch Department of Planning 2009, *Assessing Significance for Historical Archaeological Sites and Relics*, NSW Government, Heritage Branch Department of Planning.

Heritage Office 1996, *NSW Heritage Manual*, NSW Government, Office of Environment & Heritage.

Heritage Office 2001, *Assessing Heritage Significance*, NSW Government, Office of Environment & Heritage.

Heritage Office 2004, *Investigating Heritage Significance*, NSW Government, Office of Environment & Heritage.

Heritage Office 2006, *Statements of Heritage Impact Guidelines*, NSW Government, Office of Environment & Heritage.

Heritage NSW 2020, *State Heritage Inventory*, viewed on October 2020 <https://www.heritage.nsw.gov.au/search-for-heritage/state-heritage-inventory/>.

Huston, D., 2020. Australian Resource Reviews: Zinc, Lead and Silver 2019. Geoscience Australia, Canberra.

IESC 2014, *Subsidence from coal mining activities*, Independent Expert Scientific Committee, June 2014.

Irish, P 2017, *Hidden in plain view: the Aboriginal people of coastal Sydney*. Sydney, New South Wales publishing.

Karskens, G 2020, *People of the River - lost worlds of early Australia*. Sydney, Allen and Unwin

Landcom 2004, *Managing Urban Stormwater: Soils and Construction – Volume 1*, 4th edition, New South Wales Government.

McQueen, KG 2016, Mining history of the Cobar – Lake Cargelligo region, *Geological Survey of NSW report GS2016/0570*.

NEPM 2013, *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 16 May 2013*, Prepared by the Office of Parliamentary Counsel, Canberra. Federal Register of Legislative Instruments F2013C00288.

NHMRC 2015, *NHMRC information paper: evidence on the effects of lead on human health*. National Health and Medical Research Council. May 2015.

NPI 2020, *National Pollutant Inventory*, viewed on 19 October 2020 at www.npi.gov.au.

NSW Government 2020, *Water Sharing Plan for the NSW Murray-Darling Basin Fractured Rock Groundwater Sources 2020*.

NSW Rural Fire Service 2019, *Planning for bushfire protection. A guide for Councils, planners, fire authorities and developers*, NSW Rural Fire Service.

NPWS 2003, *The Bioregions of New South Wales: their biodiversity, conservation and history*, NSW National Parks and Wildlife Service, Hurstville.

NPWS 2020, *Mount Grenfell Historic Site*, viewed 17 August 2020 <https://www.nationalparks.nsw.gov.au/visit-a-park/parks/mount-grenfell-historic-site/learn-more#BF561A52BFD74C8EB986B014FCE3E6F8>

Reference

NSR 2000, *New Cobar Opencut Project Environmental Impact Statement*.

OCE 2020., *Resources and Energy Quarterly September 2020*, Department of Industry, Science, Energy and Resources, Commonwealth of Australia September 2020, Australia.

OEH 2011, *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*, Office of Environment and Heritage, Department of Premier and Cabinet.

OEH 2016, *eSPADE NSW soil and land information database*, Version 2.0. NSW Department of Planning, Industry and Environment, viewed on September 2020 <https://www.environment.nsw.gov.au/eSpade2Webapp>.

Oxley, J. 1820, *Journals of Two Expeditions into the Interior of New South Wales, Undertaken by Order of the British Government, 1817-1818*. London.

PGM 2016, *Erosion and Sediment Control Plan PLN-08-011*, Peak Gold Mines, March 2016.

PGM 2017, *Ground Control Management Plan*.

PGM 2020a, *Peak Gold Mines - Water Management Plan*, prepared by EMM Consulting for Peak Gold Mines.

PGM 2020b, *Peak Gold Mines Mining Operations Plan, 1 August 2019 – 31 July 2022*.

PGM 2020c, *Peak Gold Mine Emergency Management Plan*.

RTA 2002, *Guide to Traffic Generating Developments*.

R.W. Corkery & Co 2020, *Great Cobar Project – Review of Environmental Factors*.

Safe Work 2020, *Lead*, viewed 17 June 2020 <https://www.safeworkaustralia.gov.au/topic/lead>.

Sydney Living Museum (SLM) 2017, *Limits of location*, viewed 14 June 2019, available: <https://sydneylivingmuseums.com.au/convict-sydney/limits-location>.

SLR 2020, *Waste Rock Management Plan Peak Gold Mines*, prepared for Peak Gold Mines, March 2020.

Smart, J., Creaser, P. and Monaghan, D. 2000, *Linking Conservation Assessment and Aboriginal Ecological Knowledge on the Cobar Penplain*. NSW National Parks and Wildlife Service.

Standards Australia 1997, *Acoustics - Description and measurement of environmental noise - General procedures*

Standards Australia 1998, *Explosives, transport and use storage*, Standards Australia, July 1998

Starr and Nicholas 1978, *Pioneering New England*, pp.9-10

Sturt, C 1849, *Expeditions into central Australia*. 2 vols, reprinted. Glenwood Press, New York.

The Silver Institute 2020, *World Silver Survey 2020*. Accessed 17 November 2020 <https://www.silverinstitute.org/wp-content/uploads/2020/04/World-Silver-Survey-2020.pdf>

Tindale 1974, *Aboriginal tribes of Australia: their terrain, environmental controls, distribution, limits and proper names*, Canberra: Australian National University Press.

US EPA 2010, *Integrated Exposure Uptake Biokinetic Model for Lead in Children*, Windows version (IEUBKwin v1.1 build 11), February 2010, 32-bit version. United States Environmental Protection Agency.

US EPA 1989, *Risk assessment guidance for Superfund*. Office of Emergency and Remedial Response, US. Environmental Protection Agency.

US EPA 1999, *Guidance for conducting health risk assessment of chemical mixtures*. Risk Assessment Forum, U.S. Environmental Protection Agency.

WHO 1999, *Environmental Health Criteria 210: Principles for the assessment of risks to human health from exposure to chemicals*. World Health Organization.

WHO 2010, *Harmonization Project Document No. 8. WHO human health risk assessment Toolkit: chemical hazards*. World Health Organization.

WRMC 2009, *Australian Code for the Transport of Explosives by Road and Rail (Third edition)* Workplace Relations Ministers' Council 2009

27 Abbreviations

Term	Description
µm	Micrometres
AADT	Annual average daily traffic
ABN	Australian Business Number
ACHA	Aboriginal cultural heritage assessment
ACN	Australian Company Number
ACHAR	an Aboriginal Cultural Heritage Assessment Report
ACHMP	Aboriginal Cultural Heritage Management Plan
AEC	AEC Group Pty Ltd
AERMOD	AMS/US-EPA regulatory model
AEMR	Annual environmental management report
AEP	Annual exceedance probability
AGV	Air guideline value
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AIP	Aquifer Interference Policy
ALM	Adult lead methodology
AMD	Acid mine drainage
ANZECC	Australian and New Zealand Environment and Conservation
APZ	Asset protection zone
AQIA	air quality impact assessment
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
Aurelia	Aurelia Metals Limited
AWS	automatic weather station
BAM	beta attenuation monitor
BC Act	<i>Biodiversity Conservation Act 2016</i>
BCR	Benefit cost ratio
BDAR	Biodiversity Development Assessment Report
BoM	Bureau of Meteorology
BPb	Blood lead
°C	Degrees Celcius
c.	Circa
CAF	Cemented aggregate fill
CBA	Cost benefit analysis

Term	Description
CBD	Central business district
CCC	Community Consultation Committee
CHL	Commonwealth Heritage List
CML	Consolidated mining lease
CSA	Cornish Scottish Australian
CSC	Cobar Shire Council
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DA	Development application
DAWE	Department of Agriculture, Water and the Environment
dB	Decibel
dBA	A-weighted decibel
DECC	Department of Environment and Climate Change
DECCW	Department of Environment Climate Change and Water, now Heritage NSW
DPIE	Department of Planning, Industry and Environment
EC	Electrical conductivity
EIS	Environmental Impact Statement
EMM	EMM Consulting Pty Ltd
EPA	Environmental Protection Authority
EP&A Act	<i>Environment Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPI	Environmental planning instrument
EPL	Environmental Protection Licence
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
ESCP	Erosion and Sediment Control Plan
ESD	Ecologically sustainable development
FE	Finite element
FM Act	<i>Fisheries Management Act 1994</i>
FTE	Full time equivalents
FWR Plan	Far West Regional Plan
GCMP	Ground Control Management Plan
GCS	Great Cobar Slate
GIA	Groundwater impact assessment
GDE	groundwater dependent ecosystem
GHG	greenhouse gas
GL	Gigalitre
GRP	Gross regional product

Term	Description
GSP	Gross state product
GVA	Gross value added
ha	Hectare
Heritage Act	<i>Heritage Act 1977</i>
HEVAE	High Ecological Value Aquatic Ecosystems
HHMP	Historical Heritage Management Plan
HHRA	Human health risk assessment
HRPSA	hazard, risk and public safety assessment
HQ	Hazard quotient
HV	Heavy vehicle
HVAS	high-volume air sampler
IEUBK	Integrated Exposure Uptake Biokinetic Model
IPC	Independent Planning Commission
IO	Input-Output modelling
kL	Kilolitre
km	Kilometre
km/h	Kilometres per hour
km ²	Square kilometres
kPa	kilopascal
kV	Kilovolt
L	Litre
L/s	Litres per second
LEA	Local effects analysis
LEP	Local Environmental Plan
LFA	Landscape Function Analysis
LGA	Local government area
LOS	Level of service
LSC	Land and Soil Capability
LV	Light vehicle
LVIA	Landscape and visual impact assessment
m	Metre
M ²	Square metres
M	Million
m ³	Cubic metres
mbgl	Metres below ground level
MIC	Maximum instantaneous charge
Mining Act	<i>Mining Act 1992</i>

Term	Description
ML	Megalitres
ML	Mining leases
mm	millimetre
MNES	matters of national environmental significance
MoP	Mine operations plan
MPL	Mining purposes lease
m/s	Metres per second
Mtpa	Million tonnes per annum
NAF	Non-acid forming
NGAF	National Greenhouse Accounts Factors
NPfI	Noise Policy for Industry
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NPV	Net present value
NRAR	Natural Resources Access Regulator
NSW	New South Wales
NVIA	Noise and vibration impact assessment
OEH	Office of Environment and Heritage, now DPIE
Oz	Ounces
PAF	Potentially acid forming
Pb	Lead
PCT	Plant Community Type
PGM	Peak Gold Mines Pty Ltd
PM ₁₀	particulate matter less than 10 µm in aerodynamic diameter
PM _{2.5}	particulate matter less than 2.5 µm in aerodynamic diameter
PNTL	Project noise trigger levels
PPV	Peak particle velocity
POE Act	<i>Protection of the Environment Administration Act 1991</i>
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
PV	Present value
RAP	Registered Aboriginal Party
REF	Review of Environmental Factors
RF Act	<i>Rural Fires Act 1997</i>
RMS	Roads and Maritime Service
RNP	Road Noise Policy
ROM	Run-of-mine
RTA	Roads and Transport Authority (now TfNSW)
RTS	Response to Submissions

Term	Description
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policies
SHI	State Heritage Inventory
SHR	State Heritage Register
SIDRA	Signalised and unsignalized intersection design and research aid
SLR	SLR Consulting Australia Pty Ltd
SoEE	Statement of Environmental Effects
SoHI	Statement of heritage impact
SRLUP	Strategic Regional Land Use Policy
SSD	State Significant Development
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
SVC	Soil verification certificate
t	Tonnes
TAPM	The Air Pollution Model
TARP	Trigger Action Response Plan
TDI	Tolerable daily intake
TDS	Total dissolved solids
TfNSW	Transport for New South Wales (formerly RTA)
TIA	Traffic impact assessment
TMP	Traffic management plan
tpa	Tonnes per annum
TRF	Toxicity reference value
TSF	Tailings storage facility
TSP	total suspended particulates
TSS	Total suspended solids
WAL	Water access licence
WM Act	<i>Water Management Act 2000</i>
WMP	Water management plan
WQO	Water quality objectives
WRE	Waste rock emplacement
WRMP	Waste rock management plan
WSP	water sharing plans
WWI	World War I
WWII	World War II
VLAMP	Voluntary Land Acquisition and Mitigation Policy
XRF	x-ray fluorescence

28 Glossary

Term	Description
AERMET	Meteorological processor (model version v19191) for the AERMOD Dispersion Model
Amenity noise level	The amenity noise levels relate to the overall level of industrial noise subject to land zoning or use.
Aquifer	rock or sediment in a formation, group of formations, or part of a formation that is saturated and sufficiently permeable to transmit economic quantities of water.
A-weighting	There are several different weightings utilised for describing noise, the most common being the 'A-weighting'. This attempts to closely approximate the frequency response of the human ear.
Day period	Monday – Saturday: 7 am to 6 pm, on Sundays and Public Holidays: 8 am to 6 pm.
dB	Noise is measured in the unit called the decibel (dB).
Drawdown	a lowering of the water table in an unconfined aquifer or the pressure surface of a confined aquifer caused by pumping of groundwater from bores and wells.
Evening period	Monday – Saturday: 6 pm to 10 pm, on Sundays and Public Holidays: 6 pm to 10 pm.
Intrusiveness noise level	The intrusiveness noise level refers to noise that intrudes above the background level by more than 5 dB. The intrusiveness noise level is described in detail in this report.
LA1,1min	The 'A-weighted' noise level exceeded for 1% of the specified time period of 1 minute.
LA10	The 'A-weighted' noise level exceeded for 10% of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise level. The 'A-weighted' noise level exceeded 90% of the time.
LAeq	The energy average noise from a source. This is the equivalent continuous 'A-weighted' sound pressure level over a given period. The LAeq,15min descriptor refers to an LAeq noise level measured over a 15-minute period.
L Amin	The minimum 'A-weighted' noise level received during a measuring interval.
L Amax	The maximum root mean squared 'A-weighted' sound pressure level (or maximum noise level) received during a measuring interval.
Loss of service A	Average traffic delay of less than 14 seconds between baseline and post construction predicted traffic volumes
Night period	Monday – Saturday: 10 pm to 7 am, on Sundays and Public Holidays: 10 pm to 8 am.
NPfi	NSW Noise Policy for Industry (EPA 2017)
PNTL	The project noise trigger levels (PNTLs) are targets for a particular industrial noise source or industry. The PNTLs are the lower of either the project intrusive noise level or project amenity noise level.
RBL	The Rating Background Level (RBL) is an overall single value background level representing each assessment period over the whole monitoring period.
RNP	NSW Road Noise Policy (DECCW 2011)
Sound power level (Lw)	This is a measure of the total power radiated by a source. The sound power level of a source is a fundamental property of the source and is independent of the surrounding environment.
Temperature inversion	A positive atmospheric temperature gradient where atmospheric temperature increases with altitude.
TSF lift	Raising the height of the containment bunds of the tailings storage facility to increase the volume of post processing tailings which may be stored.

