



SECTION 8
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Abbreviations, Acronyms and Glossary

**COWAL GOLD OPERATIONS
PROCESSING RATE MODIFICATION**

Environmental Assessment
2018



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9 ABBREVIATIONS, ACRONYMS AND GLOSSARY

9.1 ABBREVIATIONS AND ACRONYMS

ACHA	Aboriginal Cultural Heritage Assessment	BVT	Biometric Vegetation Types
ADG Code	Australian Code for the Transport of Dangerous Goods by Road & Rail	CEMCC	Community Environmental Monitoring and Consultative Committee
AHD	Australian Height Datum	CGO	Cowal Gold Operations
AHIMS	Aboriginal Heritage Information Management System	cmol+/kg	centimoles of positive charge per kilogram
AHIP	Aboriginal Heritage Impact Permit	CMP	Cyanide Management Plan
AMBS	AMBS Ecology & Heritage	CN _{WAD}	weak acid dissociable cyanide
ANZECC	Australian and New Zealand Environment and Conservation Council	Coffey	Coffey Services Australia Pty Ltd
AQMP	Air Quality Management Plan	Coffey Geotechnics	Coffey Geotechnics Pty Ltd
ARI	average recurrence interval	Coffey Partners International	Coffey Partners International Pty Ltd
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand	Credit Calculator	Credit Calculator for Major Projects and Biobanking
BAR Footprints	Biodiversity Assessment Report Footprints	CWMP	Compensatory Wetland Management Plan
Barrick	Barrick (Cowal) Limited	dB	decibel
BC Act	<i>NSW Biodiversity Conservation Act, 2016</i>	dba	A-weighted decibel
BC Savings Regulation	Biodiversity Conservation (Savings and Transitional) Regulation, 2017	DEC	NSW Department of Environment and Conservation
Bland LEP	<i>Bland Local Environmental Plan 2011</i>	DECCW	NSW Department of Environment, Climate Change and Water (now OEH and NOW)
BLMP	Blast Management Plan	DEE	Commonwealth Department of the Environment and Energy
BoM	Bureau of Meteorology	DI – Crown Lands	Department of Industry – Crown Lands
BOMP	Biodiversity Offset Management Plan	DI – Water	Department of Industry – Water
BSAL	Biophysical Strategic Agricultural Land	DoP	NSW Department of Planning
		DP&E	NSW Department of Planning & Environment
		DPI	NSW Department of Primary Industries
		DPI – Water	NSW Department of Primary Industries – Water

DRE	NSW Division of Resources and Energy	FHA	Final Hazard Analysis
DRG	NSW Division of Resources and Geoscience	FM Act	<i>NSW Fisheries Management Act, 1994</i>
dS/m	deciSiemens per metre	Forbes LEP	<i>Forbes Local Environmental Plan 2013</i>
EA	Environmental Assessment	GDE	groundwater dependent ecosystems
EC	electrical conductivity	GEM	Geo-Environmental Management Pty Ltd
EEC	endangered ecological community	GL	gigalitres
e.g.	example	H	horizontal
EIS	<i>Cowal Gold Project Environmental Impact Statement</i>	ha	hectare
EL	Exploration Licence	HAZOP	Hazard and Operability Study
EMS	Environmental Management Strategy	HEC	Hydro Engineering & Consulting Pty Ltd
EP&A Act	<i>NSW Environmental Planning and Assessment Act, 1979</i>	HIPAP	Hazard Industry Planning Advisory Page
EPA	NSW Environment Protection Authority	HWCMP	Hazardous Waste and Chemical Management Plan
EPBC Act	<i>Commonwealth Environment Protection and Biodiversity Conservation Act, 1999</i>	IACHMP	Indigenous Archaeology and Cultural Heritage Management Plan
EPL	Environment Protection Licence	ICDS	Internal Catchment Drainage System
ERP	Emergency Response Plan	ICNG	<i>Interim Construction Noise Guideline (DECC, 2009)</i>
ESCMP	Erosion and Sediment Control Management Plan	INP	<i>NSW Industrial Noise Policy</i>
ESD	ecologically sustainable development	i.e.	that is
ETL	electricity transmission line	IWL	Integrated Waste Landform
<i>et al.</i>	and others	kg	kilogram
Evolution	Evolution Mining (Cowal) Pty Limited	kL/t	kilolitres per tonne
Extension Modification	Cowal Gold Mine Extension Modification (Barrick, 2011)	km	kilometre
FBA	Framework for Biodiversity Assessment	km/h	kilometres per hour
FFMP	Flora and Fauna Management Plan	km ²	square kilometre
		kV	kilovolt
		L _{Aeq}	equivalent continuous noise level

L _{A1}	1% exceedance noise level	Mt	million tonnes
LALC	Local Aboriginal Land Council	Mtpa	million tonnes per annum
LFA	Landscape Function Analysis	NAF	non-acid forming
LMP	Land Management Plan	NGER Act	Commonwealth <i>National Greenhouse and Energy Reporting Act, 2007</i>
LGA	Local Government Area		
LPBMP	Monitoring Programme for Detection of any Movement of Lake Protection Bund, Water Storage and Tailings Structures and Pit-Void Walls	NMP	Noise Management Plan
		NPW Act	NSW <i>National Parks and Wildlife Act, 1974</i>
m	metre	NPW Regulation	NSW <i>National Parks and Wildlife Regulations, 2009</i>
M	Million	NSW	New South Wales
m ²	square metres	NSW Offset Policy	NSW Biodiversity Offset Policy for Major Projects
m/s	metres per second		
mg/L	milligram per litre	NTSF	Northern Tailings Storage Facility
Mine Life Modification	CGO Mine Life Modification (Evolution, 2016)	OEH	NSW Office of Environment and Heritage
Mining SEPP	<i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>	PEL	Pacific Environment Limited
		PHA	Preliminary Hazard Analysis
		PIRMP	Pollution Incident Response Management Plan
ML	megalitre		
ML	Mining Lease	PM _{2.5}	particulate matter with an aerodynamic diameter less than 2.5 microns
MLA	Mining Lease Application		
ML/annum	megalitre per annum	PM ₁₀	particulate matter with an aerodynamic diameter less than 10 microns
ML/day	megalitre per day		
MNES	Significant Impact Guidelines 1.1 – Matters of National Environmental Significance	PoEO Act	NSW <i>Protection of the Environment Operations Act, 1997</i>
		ppm	parts per million
Modification	CGO Processing Rate Modification	PSNL	project-specific noise level
		RAP	Registered Aboriginal Party
MOP	Mining Operations Plan	RL	relative level
MOP Guidelines	NSW Division of Resources and Energy's (2013) <i>ESG3: Mining Operations Plan (MOP) Guidelines September 2013</i>	RMP	Rehabilitation Management Plan
		RMS	NSW Roads and Maritime Services
Moz	million ounces		

RO	Reverse Osmosis	WAL	Water Access License
ROM	run-of-mine	WMP	Water Management Plan
RTA	NSW Roads and Traffic Authority	µS/cm	microSiemens per centimetre
RVEP	Remnant Vegetation Enhancement Programme	%	percent
SEARs	Secretary's Environmental Assessment Requirements	°C	degrees Celsius
9.2 GLOSSARY			
SEPP 33	<i>State Environmental Planning Policy No. 33 (Hazardous and Offensive Development)</i>	Alluvial	A general term for clay, silt, sand and gravel transported by water and deposited on the bed of a floodplain, river or stream.
SEPP 44	<i>State Environmental Planning Policy No.44 (Koala Habitat Protection)</i>	Amenity	Useful and enjoyable quality.
SEPP 55	<i>State Environmental Planning Policy No. 55 (Remediation of Land)</i>	Aquifer	A sub-surface rock formation containing water in recoverable quantities.
SSMP	Soil Stripping Management Plan	Average recurrence interval (ARI)	The expected value or average value of the periods between exceedances of a given event magnitude. A term used in water engineering. Also known as "return period".
STSF	Southern Tailings Storage Facility	Background	The condition (e.g. noise levels) already present in an area before the commencement of a specific activity.
SVC	Site Verification Certificate	Baseflow	The discharge of sub-surface water into a stream (i.e. groundwater seepages).
SWGBMP	Surface Water, Groundwater, Meteorological and Biological Monitoring Programme	Baseline data	A body of information collected over time to define specific, characteristics of an area (e.g. species occurrence or noise levels) prior to the commencement of an activity (e.g. a mining operation).
the Modification	Cowal Gold Operations Processing Rate Modification		
tph	tonnes per hour		
TSF	Tailings Storage Facility		
TSP	total suspended particulate		
TSMP	Threatened Species Management Protocol		
TSR	Travelling stock reserve		
UCDS	Up-catchment Diversion System		
V	vertical		
VCP	Vegetation Clearance Protocol		
Voluntary Land Acquisition and Mitigation Policy	NSW Government (2014) <i>Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments</i>		

Batter	An engineered slope of soil or rock fill on either side upslope or downslope of a road, embankment or waste rock storage; the sloping banks of cut earth separating different levels in an open pit.	Crusher	That part of an ore-processing plant where the ore is mechanically crushed into smaller pieces.
Berm	A low bank or steep slope built onto a slope to improve its structural stability and reduce erosion.	Cut-off trench	Trench placed underneath and parallel to an embankment or dam wall and filled with material of low permeability (e.g. compacted clay) to prevent seepage underneath the embankment or wall.
Bund	An earth, rock or concrete wall or mound constructed to restrict the inflow or outflow of liquids or noise.	Cyanate	A chemical species (CNO-) formed by the oxidation of cyanide.
Carbon-in-leach process	Process of gold extraction where gold is leached from ore and adsorbed onto carbon in the same tanks.	Cyanide	A chemical (CN-) capable of dissolving gold and used in the extraction of gold from ore.
Caro's Acid	A cyanide destruction method involving the use of sulphuric acid and hydrogen peroxide.	Cyanide leaching circuit	Circuit where gold is removed from ore by dissolution in cyanide solution.
Catchment	The entire land area from which water (e.g. rainfall) drains to a specific watercourse or water body.	dB	Decibel; unit used to express sound intensity.
CN _{WAD}	Weak acid dissociable cyanide; cyanide existing in complexes, generally with metal ions, which break up (dissociate) in the presence of weak acid; includes free cyanide.	dBA	Decibels (A-weighted scale); unit used for most measurements of environmental noise; the scale is based upon typical responses of the human ear to sounds of different frequencies.
Concentration	The amount of a substance per unit of mass or volume of the medium in which it occurs.	Decommissioning	Removal or reuse of infrastructure.
Cross-section	A two-dimensional diagram of an object presented as if the object had been cut across its length.	Drawdown	The localised lowering of groundwater level.
		Electrical conductivity (EC)	The ability of a substance (either solid, liquid or gas) to transmit electricity.
		Emission	The discharge of a substance (e.g. dust) into the environment.

Embankment lifts	An embankment is constructed by the placement of a series of progressively higher and narrower earth or rock layers; each separate layer is called a lift.	<i>In situ</i>	A term used to distinguish material (e.g. soils, minerals, fossils, etc.) found in its original position of formation, deposition, or growth, as opposed to transported material.
Endemic	Native plant or animal restricted to a specific locality or geographic region.	Lacustrine	Pertaining to lakes.
Final void	A completed (mined-out) open pit.	LAeq	The equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period.
Freeboard	Excess water storage capacity (usually designed to contain rainwaters).	Leach	Dissolution and removal of a soluble substance from a soil or a rock, e.g. the leaching of salt (by water) from a soil or the leaching of gold (by cyanide) from a rock.
Grade	The concentration of gold either in an individual rock sample or averaged over a specified volume of rock; gold grade is usually given in grams per tonne.	Mitigation	Measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.
Greenhouse gases	Gases with potential to cause climate change (e.g. methane, carbon dioxide and non-methane volatile organic compounds). Usually expressed in terms of carbon dioxide equivalent.	Noise contours	Theoretical lines connecting points of equal noise value.
Groundwater	All waters occurring below the land surface; the upper surface of the soils saturated by groundwater in any particular area is called the watertable.	Mineralised Material	Material that contains a potentially economically recoverable quantity of gold.
Hydraulic gradient	The change in static head (i.e. elevation and pressure) per unit of distance in a given direction. (Units: dimensionless).	Ore	Rock containing commercially viable quantities of metals (e.g. gold).
<i>ibid.</i>	In the same place.	Orebody	A solid mass of ore (both high and low grade) that is geologically distinct from the rock that surrounds it and that is commercially extractable.
INCO	Cyanide destruction method involving the introduction of sulphur dioxide as sodium metabisulphite.	Oxide ore	That component of the ore reserve composed of weathered (oxidised) rock.

<p>Palaeochannel</p> <p>An ancient stream channel that is now buried.</p>	<p>Stakeholder</p> <p>Any individual, group or organisation that can affect, be affected by, or perceive itself to be affected by the behaviour of a company or an organisation.</p>
<p>Permeability</p> <p>The ability of a rock or soil to allow fluid to pass through it.</p>	<p>Tailings</p> <p>Finely ground residue from processing and extraction of product from ore.</p>
<p>pH</p> <p>A measure of the degree of acidity or alkalinity of a solution; expressed numerically (logarithmically) on a scale of 1 to 14, on which 1 is most acid, 7 is neutral, and 14 is most basic (alkaline).</p>	<p>Topsoil</p> <p>The upper or top layer of soil, that typical has higher levels of organic matter and associated micro-organisms.</p>
<p>Primary crusher</p> <p>The machine that crushes the excavated ore feed.</p>	<p>Total suspended particulate matter (TSP)</p> <p>The mass of all particulate matter suspended in a solution (e.g. the air).</p>
<p>Primary ore</p> <p>The compound of the ore which is composed of unweathered rock.</p>	<p>WAD</p> <p>Weak acid dissociable.</p>
<p>Process plant</p> <p>The place where the extraction of the gold from the mined ore occurs.</p>	<p>Waste rock</p> <p>Uneconomic rock extracted from the ground during mining operation to gain access to the ore.</p>
<p>Rehabilitation</p> <p>The restoration of a landscape and especially the vegetation following its disturbance.</p>	
<p>Runoff</p> <p>A portion of precipitation (rain, hail and snow) that flows across the ground surface as water.</p>	
<p>Salinity</p> <p>The total content of dissolved solids in groundwater or surface water, commonly expressed as parts of dissolved solids per million parts of solution, or milligrams of dissolved solids per litre of solution (mg/L).</p>	
<p>Seepage</p> <p>Liquid or fluid such as water, seeping or flowing from beneath the ground to the surface.</p>	