



Environmental Assessment  
**Cadia East Project**

**SECTION 8**

CADIA EAST PROJECT

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ABBREVIATIONS, ACRONYMS AND GLOSSARY

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## 8 ABBREVIATIONS, ACRONYMS AND GLOSSARY

### 8.1 ABBREVIATIONS AND ACRONYMS

ADG Code	<i>Australian Code for the Transport of Dangerous Goods by Road and Rail</i>	BVMP	Blasting and Vibration Management Plan
AEMR	Annual Environmental Management Report	Cadia Extended	Cadia Extended open pit
AGE	Australasian Groundwater and Environmental Consultants Pty Ltd	Cadia Hill	Cadia Hill Gold Mine
AGO	Australian Greenhouse Office	Cadia Hill EIS	<i>Cadia Gold Mine Environmental Impact Statement</i>
AHD	Australian Height Datum	CCC	Community Consultative Committee
ANC	acid neutralising capacity	CEEC	Critically Endangered Ecological Community
ANFO	ammonium nitrate fuel oil	CHPL	Cadia Holdings Pty Limited
ANZECC	Australian and New Zealand Environmental and Conservation Council	CIC	Cadia Intrusive Complex
ARD	acid rock drainage	cm	centimetre
ARI	Average Recurrence Interval	CMT	culturally modified tree
ARTC	Australian Rail Track Corporation	CO <sub>2</sub> -e	carbon dioxide equivalent
AS	Australian Standard	CO <sub>2</sub> -e pa	carbon dioxide equivalent per annum
AS/NZS	Australian Standard/New Zealand Standard	COI	Commission of Inquiry
BMP	Bushfire Management Plan	CoRTN	Calculation of Road Traffic Noise
BoM	Bureau of Meteorology	CSC	Cabonne Shire Council
Box-Gum Grassy Woodlands and Derived Native Grasslands CEEC	White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community	dBA	A-weighted decibel
Box-Gum Woodland EEC	White Box/Yellow Box/Blakely's Red Gum Woodland Endangered Ecological Community	dBL	linear decibel
BSC	Blayney Shire Council	DCC	Commonwealth Department of Climate Change
		DGP	Development Control Plan
		DEC	NSW Department of Environment and Conservation
		DECC	NSW Department of Environment and Climate Change (formerly DEC)
		DEH	Commonwealth Department of the Environment and Heritage
		DEUS	NSW Department of Energy, Utilities and Sustainability
		Dewatering Facility EIS	<i>Concentrate Dewatering Facility Environmental Impact Statement</i>

DEWHA	Commonwealth Department of the Environment, Water, Heritage and the Arts	EGi	Environmental Geochemistry International Pty Ltd
DITR	Commonwealth Department of Industry, Tourism and Resources	EIS	Environmental Impact Statement
DLWC	NSW Department of Land and Water Conservation	ENCM	Environmental Noise Control Manual
DMP	Dust Management Plan	EP&A Act	<i>Environmental Planning and Assessment Act, 1979</i>
DMR	NSW Department of Mineral Resources	EP&A Model Provisions	<i>Environmental Planning and Assessment Model Provisions, 1980</i>
DNR	NSW Department of Natural Resources	EP&A Regulation	<i>Environmental Planning and Assessment Regulation, 2000</i>
DoP	NSW Department of Planning	EPA	Environment Protection Authority
DPI	NSW Department of Primary Industries (formerly DUAP)	EPBC Act	<i>Environment Protection and Biodiversity Conservation Act, 1999</i>
DPI–Agriculture	NSW Department of Primary Industries–Agriculture	EPBC Regulations	<i>Environment Protection and Biodiversity Conservation Regulations, 2000</i>
DPI–Fisheries	NSW Department of Primary Industries–Fisheries	EPL	Environment Protection Licence
DPI-MR	NSW Department of Primary Industries – Mineral Resources (formerly DPI-MR)	ESD	Ecologically Sustainable Development
DSE	dry sheep equivalent	ERA	Environmental Risk Assessment
DTRS	NSW Department of Transport and Regional Services	ESAP	Energy Savings Action Plan
DUAP	NSW Department of Urban Affairs and Planning	<i>et al.</i>	and others
DWE	NSW Department of Water and Energy	ETL	Electricity Transmission Line
e.g.	for example	FFMP	Flora and Fauna Management Plan
EA	Environmental Assessment	FM Act	<i>Fisheries Management Act, 1994</i>
EARs	Director-General's Environmental Assessment Requirements	FMP	Farm Management Plan
EC	Electrical Conductivity	Forests NSW	NSW Department of Primary Industries - Forests
ECRTN	<i>NSW Environmental Criteria for Road Traffic Noise</i>	FSTSF	Far South Tailings Storage Facility
EDAW	EDAW Australia Pty Ltd	g/m <sup>2</sup> /month	grams per square metre per month
EEC	Endangered Ecological Community	g/t	grams per tonne
EEO	Energy Efficiency Opportunities	GHG Protocol	Greenhouse Gas Protocol

GRP	Gross Regional Product	L/s	litre per second
GSE	General Security Entitlements	L/t	litre per tonne
GTA	General Terms of Approval	L <sub>Aeq</sub>	equivalent continuous noise level
GWAHS	Greater Western Area Health Service	Lachlan River Catchment EEC	Aquatic Ecological Community in the Natural Drainage System of the Lowland Catchment of the Lachlan River
ha	hectare		
HDPE	high-density polyethylene	L <sub>AN</sub>	noise exceedance level
HFC	hydrofluorocarbon	LCMA	Lachlan Catchment Management Authority
HPGR circuit	high pressure grinding roll/ball mill comminution circuit	LEP	Local Environment Plan
HSE	High Security Entitlements	LGA	Local Government Area
HVAS	high volume air samplers	LHD	load-haul-dump
i.e.	that is	LMP	Land Management Plan
IBRA	<i>Interim Biogeographic Regionalisation for Australia</i>	LPG	Liquid Petroleum Gas
ID	internal diameter	m	metre
IЕСP	Integrated Erosion and Sediment Control Plan	M	million
IMOА	International Molybdenum Association	m <sup>2</sup> /day	square meter per day
INP	<i>NSW Industrial Noise Policy</i>	m <sup>3</sup> /s	cubic metre per second
IQQM	Integrated Quantity-Quality Model	m/day	metre per day
kg	kilogram	m/s	metre per second
kg H <sub>2</sub> SO <sub>4</sub> /t equiv	equivalent kilograms of sulphuric acid per tonne	Major Projects SEPP	<i>State Environmental Planning Policy (Major Projects) 2005</i>
kg/t	kilogram per tonne	MESH	MESH Environmental Inc.
kL	kilolitre	mg/L	milligram per litre
km	kilometre	MIBC	Methyl Isobutyl Carbinol
km <sup>2</sup>	square kilometre	MIC	Maximum Instantaneous Charge
kt	kilotonne	Mining SEPP	<i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>
kV	kilovolt	ML	Mining Lease
kW	kilowatt	ML	megalitre
L	litre	ML/annum	megalitre per annum
L/min	litre per minute		

ML/day	megalitre per day	OLALC	Orange Local Aboriginal Land Council
MLA	Mining Lease Application	pa	per annum
mm	millimetre	PAF	potentially acid forming
Mm <sup>3</sup>	million cubic metres	PCS	Process Control System
mm/s	millimetre per second	PHA	Preliminary Hazard Analysis
MOP	Mining Operations Plan	PM <sub>10</sub>	particulate matter less than 10 microns in size
MREMP	Mining, Rehabilitation and Environmental Management Process	PoEO Act	<i>Protection of the Environment Operations Act, 1997</i>
MREMP Guidelines	<i>Guidelines to the Mining, Rehabilitation and Environmental Management Process</i>	PPV	peak particle velocity
		PVS	Peak Vector Sum
MSDS	Material Safety Data Sheet	RBL	rating background level
Mt	million tonnes	Ridgeway	Ridgeway Gold Mine
Mtpa	million tonnes per annum	Ridgeway Deeps SEE	<i>Ridgeway Deeps Statement of Environmental Effects</i>
MW	megawatt	Ridgeway EIS	<i>Ridgeway Project Environmental Impact Statement</i>
Newcrest	Newcrest Mining Limited	Ridgeway Trial SEE	<i>Ridgeway Trial Statement of Environmental Effects</i>
NGA Factors	<i>National Greenhouse Accounts Factors</i>	RL	Relative Level
NGER Act	<i>National Greenhouse and Energy Reporting Act, 2007</i>	RTA	NSW Roads and Traffic Authority
NHMRC	National Health and Medical Research Council	SEE	Statement of Environmental Effects
NMP	Noise Management Plan	SEPP	State Environmental Planning Policy
NPWS	NSW National Parks and Wildlife Service	SEPP 33	<i>State Environmental Planning Policy No.33 (Hazardous and Offensive Development)</i>
NSESD	National Strategy for Ecologically Sustainable Development	SEPP 44	<i>State Environmental Planning Policy No. 44 (Koala Habitat Protection)</i>
NSW	New South Wales	SEPP 55	<i>State Environmental Planning Policy No.55 (Remediation of Land)</i>
NTS Corp	NSW Native Title Service	SIDRA	Signalised and unsignalised Intersection Design and Research Aid
NTSF	Northern Tailings Storage Facility		
O <sub>2</sub>	oxygen		
OCB	Orange, Cabonne and Blayney		
OCC	Orange City Council		

SLA	Statistical Local Area	%	percent
SLB	Southern Lease Boundary	°	degrees
STSF	Southern Tailings Storage Facility	°C	degrees Celsius
t	tonne		
t/month	tonne per month		
TDS	total dissolved solids		
TEOM	Tapered Element Oscillating Microbalance		
the Project	Cadia East Project		
TKN	Total Kjeldahl Nitrogen as N		
tpa	tonne per annum		
tph	tonne per hour		
TSC Act	<i>Threatened Species Conservation Act, 1995</i>		
TSMP	Threatened Species Management Protocol		
TSP	total suspended particulates		
TSS	Total suspended solids		
URS	URS Australia Pty Limited		
USDA-FS	United States Department of Agriculture – Forestry Service		
w/w	by weight		
Waste Guidelines	<i>Waste Classification Guidelines Part 1: Classifying Waste</i>		
WBCSD	World Business Council for Sustainable Development		
WIRES	NSW Wildlife Information and Rescue Service		
WMP	Waste Management Plan		
ZVI	zone of visual influence		
µm	micrometre		
µg/m <sup>3</sup>	microgram per cubic metre		
µS/cm	microSiemen per centimetre		

**8.2 GLOSSARY**

Adsorption	The adhesion of a molecule or particle to a surface.
Alluvial	A general term for clay, silt, sand and gravel transported by water and deposited, on the bed of a floodplain, river or stream.
Ambient noise	The all-encompassing noise associated with a given environment. It is the cumulative result of sounds from many sources, both near and far.
Amenity	Useful and enjoyable quality.
Aquifer	A sub-surface rock formation containing water in recoverable quantities.
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”.
Background	The condition (e.g. noise levels, bird populations) already present in an area before the commencement of a specific activity (e.g. a mining operation).
Batter	An engineered slope of soil or rock fill on either side upslope or downslope of a road, embankment or mine waste storage; the sloping banks of cut earth separating different levels in an open pit.
Berm	A low bank or steep slope built onto a slope to improve its structural stability and reduce erosion.

<p><b>Biological diversity</b></p> <p>The diversity of different species of plants, animals and micro-organisms, including the genes they contain, in the ecosystem of which they are part.</p>	<p><b>Drawdown</b></p> <p>The localised lowering of groundwater level.</p>
<p><b>Bund</b></p> <p>An earth, rock or concrete wall or mound constructed to restrict the inflow or outflow of liquids or noise.</p>	<p><b>Edaphic</b></p> <p>Pertaining to ecological formations or effects resulting from or influenced by local conditions of the soil or substrate; also an old term applied to any soil characteristic that affects plant growth.</p>
<p><b>Block caving</b></p> <p>A method of underground mining that involves fracturing ore and host rock under controlled conditions, causing the ore to break or cave under its own weight. Block caving proceeds by undercutting a discrete block (which may represent the full footprint of the orebody).</p>	<p><b>Effluent</b></p> <p>The liquid waste discharged from a sewage treatment system.</p>
<p><b>Boxcut</b></p> <p>A small open cut created to provide a secure and safe portal as access to a decline to an underground mine.</p>	<p><b>Egress</b></p> <p>An exit or way out.</p>
<p><b>Brackish water</b></p> <p>Water that is more saline than fresh water, but not to the extent of seawater.</p>	<p><b>Embankment lifts</b></p> <p>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.</p>
<p><b>Confluence</b></p> <p>A body of water formed by the flowing together of two or more watercourses.</p>	<p><b>Emulsion explosive</b></p> <p>An explosive consisting of an aqueous phase dispersed within a continuous oil phase, when detonated the two elements combine creating an explosive reaction.</p>
<p><b>Decant pond</b></p> <p>A pond formed in a tailings storage facility by runoff of tailings supernatant liquor, from which water is pumped (decanted) from the pond and fed back to the processing plant as process water.</p>	<p><b>Endemic</b></p> <p>Native plant or animal originating or living/occurring naturally in an area or environment (e.g. the Central Tablelands botanical region).</p>
<p><b>Decommissioning</b></p> <p>Removal or reuse of infrastructure.</p>	<p><b>Ephemeral stream</b></p> <p>A stream which flows only after rainfall or snow-melt and has no baseflow component.</p>
<p><b>Drawbells</b></p> <p>Used in block caving and panel caving, drawbells serve as a place for caving rock to fall into. The ore caves and falls into the drawbells which is removed via haulage access.</p>	<p><b>Escarpment</b></p> <p>A long steep slope or cliff at the edge of a plateau or ridge; usually formed by erosion.</p>
	<p><b>Fault</b></p> <p>Major fracture of the earth's crust caused by the relative movement of the rock masses on either side.</p>
	<p><b>Final void</b></p> <p>A completed (mined-out) mine pit or subsidence zone area.</p>

<p>Flocculants</p> <p>Chemicals added to flotation cells to coagulate fine particles.</p>	<p>LA<sub>eq</sub></p>	<p>The equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period.</p>
<p>Flotation</p> <p>The process used to separate different minerals found in a mass of powdered ore based on their tendency to sink in, or float on, a given liquid.</p>	<p>Leach</p>	<p>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 from a rock.</p>
<p>Hydraulic conductivity</p> <p>A measure of the capacity for a rock or soil to transmit water.</p>	<p>Lithology</p>	<p>The branch of geology that studies rocks: their origin, formation, mineral composition and classification.</p>
<p>Hydraulic fracturing</p> <p>Involves isolating sections of ore via drilling and creating a pressurised zone by pumping water into the system until the tensile strength of the rock is reached and a fracture is created.</p>	<p>Metallurgy</p>	<p>The science that deals with the extraction of metallic materials from ores.</p>
<p>Hydraulic gradient</p> <p>The change in static head (i.e. elevation and pressure) per unit of distance in a given direction. (Units: dimensionless).</p>	<p>Mine waste</p>	<p>By-products of mining operations with no economic value.</p>
<p>Hydrocarbon</p> <p>Compounds containing various combinations of hydrogen and carbon atoms. They may be emitted into the air by natural sources, as a result of fossil and vegetative fuel combustion, fuel volatilisation, and solvent use.</p>	<p>Mine water</p>	<p>All water used in mining and processing (for dust suppression, in leach tanks, etc.).</p>
<p><i>in-situ</i></p> <p>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.</p>	<p>Mitigation</p>	<p>Measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.</p>
<p>Intermittently</p> <p>Occurring at irregular intervals.</p>	<p>Molybdenum</p>	<p>A polyvalent metallic element that is used to strengthen and harden steel.</p>
<p>Interpolation</p> <p>Calculating the value of a mathematical function that lies between known values.</p>	<p>Noise contours</p>	<p>Theoretical lines connecting points of equal noise value.</p>
<p>LA<sub>10</sub></p> <p>The noise exceeded by 10% of the measurement period. Commonly referred to as the average maximum.</p>	<p>Ore</p>	<p>Rock containing commercially viable quantities of metals (e.g. gold).</p>
	<p>Orebody</p>	<p>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.</p>

Oxidation	The process by which an element or compound undergoes a chemical reaction involving the removal of electrons; often involves reaction with oxygen to form an oxide (e.g. the rusting of iron).	Qualitative	Descriptions or distinctions based a quality rather than a quantity.
Palaeochannel	An ancient stream channel that is now buried.	Quartz	The most abundant and common mineral, consisting of crystalline silica (silicon dioxide, SiO <sub>2</sub> ), crystallizing in the trigonal system.
Panel caving	A method of underground mining that involves fracturing ore and host rock under controlled conditions, causing the ore to break or cave under its own weight. Panel caving proceeds by advancing the undercut in a diagonal front across adjacent panels.	Rating Background Level (RBL)	The overall single-figure sound background level representing each assessment period (day/evening/night) over the whole monitoring period, and is the level used for assessment purposes.
Permeability	The ability of a rock or soil to allow fluid to pass through it.	Reagents	Chemicals used as part of an industrial process.
pH	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 acid, and 14 is most basic (alkaline).	Rehabilitation	The restoration of a landscape and especially the vegetation following its disturbance.
Phytotoxic	Poisonous to plants.	Relative humidity	The ratio of actual moisture in the air to the amount the air could hold if saturated, at a given temperature.
Piezometer	A non-pumping well, generally of small diameter, for measuring the elevation or pressure in a water table.	Remnant vegetation	Native vegetation remaining after widespread clearing has taken place.
Portal	The surface entry or exit point of an underground passage.	Riparian	Pertaining to, or situated on, the bank of a body of water, especially a watercourse such as a river.
Potable water	Water of quality suitable for human consumption.	Rip-Rap	Cobblestone or coarsely broken rock used for protection against erosion of an embankment or gully.
Pre-stripping	The removal of waste or overburden, before mining, to expose an orebody.	Runoff	That portion of precipitation (rain, hail and/or snow) that flows across the ground surface as water.
Pyrite	A common, yellow, sulphide mineral; FeS <sub>2</sub> .	Sacrificial anode	A piece of corrodible metal, attached to a metallic surface that is to be protected, that is preferentially consumed by electrolytic action.
		Seepage	Liquid or fluid such as water, seeping or flowing from beneath the ground to the surface.

Sensitive receivers	Buildings in close proximity to a project site that may be impacted upon during construction and/or operational periods of the project.	Terrestrial	Living or growing on the land.
Sluicing	The act of washing gold from river gravel through the use of a sluice box.	Total suspended particulate matter (TSP)	The mass of all particulate matter suspended in a solution (e.g. the air).
Stakeholder	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.	Total suspended solids (TSS)	A common measure used to determine suspended solids concentrations in a waterbody and expressed in terms of mass per unit of volume (e.g. milligrams per litre).
Stream gauging	Determination of water level and velocity in a stream or river for the purpose of calculating the volume of flow.	Transmissivity	The rate at which groundwater travels through a permeable geologic layer.
Stochastic	By means of a process involving a randomly determined sequence of events.	Tributary	A smaller watercourse, which discharges into a larger watercourse.
Sub-aerial	Method of tailings deposition involving progressive peripheral discharge of tailings slurry around the storage (typically via a spigotted ring main) with thin-layer beaching resulting.	Undulating	Used to describe topography that is wave-like in appearance.
Sublevel caving	A mining method that involves the development of a series of horizontal sublevels with parallel development drives that span across the orebody.	Waste rock	Uneconomic rock extracted from the ground during mining operation to gain access to the ore.
Subsidence	Vertical and horizontal movement of the land surface as a result of the extraction of underlying ore. It results on the development of new stepped slopes and localised slips and slumping.	w/w	an abbreviation for "by weight," used in chemistry and pharmacology to describe the concentration of a substance in a mixture or solution (i.e. 2% w/w means that the mass of the substance is 2% of the total mass of the solution or mixture).
Supernatant	The layer of water above settled solids.		
Surfactant	A chemical agent capable of reducing the surface tension of a liquid in which it is dissolved.		
Tailings	Finely ground residue from processing and extraction of product from ore.		